

**FINAL  
ENVIRONMENTAL ASSESSMENT  
FOR THE  
MILITARY HOUSING  
PRIVATIZATION INITIATIVE (MHPI)  
WHITEMAN AIR FORCE BASE, MISSOURI**



**MARCH 2010**

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## **Final**

### **FINDING OF NO SIGNIFICANT IMPACT FOR MILITARY HOUSING PRIVATIZATION INITIATIVE AT WHITEMAN AIR FORCE BASE, MISSOURI**

Pursuant to the Council on Environmental Quality (CEQ) regulations for implementing procedural provisions of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] Part 1500–1508), Department of Defense Directive 6050.1 and 32 CFR Part 989, the Air Force has conducted an Environmental Assessment (EA) of the probable environmental consequences of implementing the Military Housing Privatization Initiative (MHPI) at Whiteman Air Force Base (WAFB), Missouri.

#### **ACTION AGENCY**

United States Air Force, Air Combat Command – Whiteman AFB

#### **PURPOSE AND NEED**

The purpose of the Proposed Action is to provide access to safe, quality, well-maintained housing in a community where Air Force members and their families will choose to live; a community consisting of neighborhood settings that include amenities such as common areas and recreational opportunities (identified as desired features). Determining the specific need for required housing at MAFB involved estimating the number of appropriate private sector housing units available to military families within 20 miles, or a 60-minute commute. The need associated with housing on WAFB is the result of a Housing Requirements and Market Analysis conducted for WAFB in 2005 to identify the housing units available to military members in the private community and determine the number of units that the Air Force needs to provide at WAFB for its personnel by calendar year 2010. The total military family housing (MFH) requirement for WAFB factored in shortfalls in the available private sector housing, resulting in a housing requirement on WAFB of 932 units. Prior to 2005, and ongoing currently, WAFB began a military construction (MILCON) process to demolish and construct several new homes within the MFH areas. The MILCON process is separate from the MHPI and has been evaluated in previous NEPA documentation. At the conclusion of the MILCON process, WAFB will have a total of 933 housing units (via a combination of older units and newly constructed units) distributed throughout five different housing areas.

#### **DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

##### **Proposed Action (EA Section 2.2, pages 2-1 through 2-6)**

The Proposed Action is to convey all 933 units, as well as related infrastructure (utility lines, roads, etc.) and the Housing Management Office to a private developer who would own and operate the housing units and associated infrastructure and Housing Office. Of these 933 units, the developer would be required to conduct minor repairs (fixing of siding, updating light fixtures and windows, etc.) on 174 units. The developer may, depending on details yet to be determined in the final MHPI proposal, construct several desired features for the housing areas, including community centers and recreational facilities. The alternatives for implementing the Proposed Action are associated with reducing the number of end-state units, which would require the developer to demolish a number of units. The following activities are associated with the Proposed Action:

### Whiteman AFB MHPI Proposed Action Details

Existing Housing Area /Facility	Estimated Size of Lease (Acres)	Length of Lease (Years)	Number of Units Conveyed	Max Units Needing Minor Repairs	Max Units Potentially Demolished	Max Units Potentially Constructed	Total End-State Units
Bear Lake	107	50	208	0			933
Ridgeview	57		140	140	0		
Lakeside	98		213		0		
Midland	59		104	34	0		
Woodview	137		268		0		
Housing Office	0.5		Housing Office				
<b>Total*</b>	<b>458.5</b>	N/A	<b>933</b>	<b>174</b>	<b>0</b>		

AFB = Air Force Base; MHPI = Military Housing Privatization Initiative

\*Housing Office not included in unit totals

### Proposed Action Potential Desired Feature Construction

Desired Feature	Number of Items	Estimated Square Footage (each)*
Community Center	2	15,000
Basketball Court	4	4,700
Tennis Court	4	7,200
Outdoor Volleyball Court	4	3,700
Driveway Widening	176	40
Covered Bus Stop Shelter	20	100
<b>Total</b>		<b>101,440</b>

\*Based on typical standard-sized facilities.

#### **Alternative 1: 891 End-State Units (EA Section 2.5.1, pages 2-7 through 2-9)**

The difference between the Proposed Action and this alternative is that, rather than conduct minor repairs, the Air Force would demolish eight units at Lakeside and four units at Midland via an additional MILCON, thus conveying 921 units. The developer or the Air Force would then demolish an additional 30 units at Midland. The end state would then be 891 units after demolition of 42 units total. The developer would conduct minor repairs on 140 units rather than 174. In addition, added to the list of desired features would be a new Housing Maintenance Facility. The land associated with the 30 units at Midland would be returned to the government once demolition is completed. The following activities are associated with Alternative 1:

### Whiteman AFB MHPI Alternative 1 Details

Existing Housing Area /Facility	Max Units Potentially Demolished Prior to Conveyance	Estimated Size of Lease (Acres)	Length of Lease (Years)	Number of Units Conveyed	Max Units Needing Minor Repairs	Max Units Potentially Demolished	Max Units Potentially Constructed	Total End-State Units
Bear Lake	0	107	50	208	140	0	0	891
Ridgeview	0	57		140		0		
Lakeside	8	98		205		0		
Midland	4	38		100		30		
	0	21		268		0		
Woodview	0	137		Housing Office		0		
Housing Office	N/A	0.5						
<b>Total*</b>	<b>12</b>	<b>458.5</b>	<b>N/A</b>	<b>921</b>	<b>140</b>	<b>30</b>	<b>0</b>	

AFB = Air Force Base; MHPI = Military Housing Privatization Initiative

\*Housing Office not included in unit totals

\*\*Dependent on time taken for developer to demolish units

### Whiteman AFB MHPI Alternative 1 Housing Unit Potential Demolition and Additional Desired Feature Construction

Housing Area	Potential Demolition			
	# Units	Gross Square Footage / Unit	Additional Impervious Surface Area / Unit (SqFt)	Total Demolished (SqFt)
Lakeside	8	1,228.5	1,275	20,028
	16	1,134		38,544
	18	1,148		43,614
	Roadway	N/A		38,293
<b>Total</b>	<b>42*</b>	<b>N/A</b>	<b>N/A</b>	<b>140,479</b>
Potential Construction				Total Estimated Gross Square Footage
Facility (unit)				Total Estimated Gross Square Footage
Housing Maintenance Facility (1)				4,700
Housing Maintenance Facility Parking				2,000
Community Center (2)				30,000
Basketball Court (4)				18,800
Tennis Court (4)				28,800
Driveway Widening (176)				7,040
Covered Bus Stop Shelter (20)				2,000
Outdoor Volleyball Court (4)				14,800
<b>Total</b>				<b>108,140</b>

\* The eight units at Lakeside and four of the Midland units would be demolished by the Air Force prior to conveyance.

### **No Action Alternative (EA Section 2.5.2, page 2-9)**

Under the No Action Alternative, the Air Force would not implement the MHPI program at WAFB and would manage and maintain existing and newly constructed housing in accordance with existing Air Force policy. Currently, 174 units (140 at Ridgeview and 34 at Midland) require minor repairs; these units would receive minor repairs regardless of MHPI and such activities are therefore a component of the No Action Alternative. New housing construction via ongoing MILCON activities would continue until completed. Ongoing housing MILCON replacement was previously assessed and approved through the NEPA process.

### **Alternatives Considered but Eliminated (EA Section 2.4, page 2-7)**

Since nearly all of the housing units that would be owned and operated under privatization will be either newly constructed or renovated already through ongoing MILCON projects, alternatives associated with developing new housing areas were not considered as part of the MHPI program. Instead, alternatives associated with the disposition of housing units that would not be affected by ongoing MILCON activities are considered in this EA.

## **ISSUES ELIMINATED FROM DETAILED ANALYSIS**

The Air Force conducted preliminary impact analyses to identify resource areas that would be potentially impacted as a result of the Proposed Action and alternatives. Based on preliminary impact analyses, the Air Force does not anticipate the Proposed Action or alternatives will result in impacts to the following resource areas: cultural resources, biological resources, land use, transportation, utilities and infrastructure, safety/occupational health, noise, and environmental justice. As a result, these issues were not analyzed further in the EA.

## **SUMMARY OF ANTICIPATED ENVIRONMENTAL EFFECTS**

Chapter 3 of the EA identifies anticipated environmental effects of the Proposed Action, Alternative 1, and No Action Alternative (Chapter 3, pages 3-1 to 3-33). The Proposed Action would not significantly affect any of the resource areas identified in Chapter 3 of the EA. The following paragraphs summarize the potential effects of the Proposed Action and alternatives.

**Air Quality (EA Section 3.1, pages 3-1 to 3-4):** There would be no significant impacts to air quality from the Proposed Action or alternatives. Air emissions associated the Proposed Action and alternatives would result from construction and demolition activities (mainly carbon monoxide and fugitive dust emissions).

**Water Resources (EA Section 3.2, pages 3-4 to 3-11):** No impacts to groundwater quality are anticipated with the implementation of the Proposed Action or alternatives. Only minimal impacts to surface water resources would be anticipated under the Proposed Action should the entire 2.3 acres of proposed construction of desired features occur. These impacts would include minor sedimentation and erosion and would be minimized with best management practices associated with the installation's Storm Water Pollution Prevention Plan. Construction or demolition activities greater than 1 acre would require a Land Disturbance Permit from the Missouri Department of Natural Resources. Additional short-term impacts may be expected under Alternative 1 due to the increased construction and demolition footprint (8 acres). These impacts would be minimized with best management practices (BMPs) as under the Proposed Action. In the long term the removal of impervious surfaces due to demolition would have minor positive impacts to surface water resources. No floodplain or wetland impacts are anticipated.

**Soils (EA Section 3.3, pages 3-11 to 3-14):** No adverse impacts to soil resources are anticipated. Under the Proposed Action approximately 2.3 acres of land would be disturbed, and under Alternative 1 approximately 8 acres would be disturbed. A Land Disturbance Permit would be required from the Missouri Department of Natural Resources for construction and demolition activities over 1 acre, thus requiring BMPs for soil erosion to minimize any potential impacts.

**Hazardous Materials and Waste (EA Section 3.4, pages 3-14 to 3-25):** There would be no significant impact with regard to hazardous materials or waste. The management of these materials and wastes would be performed according to prescribed procedures already in place, which are designed to prevent or reduce pollution, reduce safety and health risks, and recycle wastes when possible. Wastes that cannot be recycled would be disposed of in a manner approved by the USEPA, at licensed facilities.

**Solid Waste (EA Section 3.5, pages 3-25 to 3-30):** There would be no significant impacts associated with solid waste from the Proposed Action or alternatives. Renovation, demolition, and construction activities would generate solid waste; however, the amounts of waste generated would be reduced through recycling and reuse of waste materials to the extent practicable. Amounts of waste requiring landfill disposal would not significantly impact local landfill disposal capacity.

**Socioeconomics (EA Section 3.6, pages 3-30 to 3-33):** The Air Force has not identified any significant socioeconomic impacts associated with the Proposed Action or alternatives. Minor beneficial impacts would be realized via job creation and expenditures in the local economy.

#### PUBLIC / AGENCY REVIEW

The Air Force published a public notice in the *Sedalia Democrat, Warrensburg Daily Star Journal*, and the Whiteman AFB newspaper on 31 January 2010 and 3 February 2010, inviting the public to review and comment upon the EA (located at the Trails Regional Library, the Sedalia Public Library and the Whiteman AFB Library). The Air Force also provided the following agencies copies of the EA for review and comment: U.S. EPA Region 7; State of Missouri Federal Assistance Clearinghouse; Missouri State Historic Preservation Office; U.S. Fish and Wildlife Service Columbia Field Office; and U.S. Army Corps of Engineers.

The public comment and agency review period ended on 3 March 2010. The only responses received were from the State of Missouri Federal Assistance Clearinghouse and the Missouri State Historic Preservation Office, which both concurred on the FONSI. No public comments were received on the EA.

#### PERMITS AND REGULATORY CONSIDERATIONS

Should the Air Force choose to implement the Proposed Action or Alternative 1, an authorization to discharge storm water under the Missouri Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity would have to be obtained.

#### FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the facts and the environmental analysis contained in the attached EA and as summarized above, I find the proposed decision of the Air Force to implement the MHPI at WAFB under either the Proposed Action or Alternative 1 will not have a significant impact on the human or natural environment; therefore, an environmental impact statement is not required. The selected developer proposal will be evaluated by the Air Force to determine whether it is within the scope analyzed in this EA and whether additional NEPA analysis is warranted. This analysis fulfills the requirements of the NEPA, the President's CEQ, and 32 CFR Part 989.

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Date

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**FINAL  
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PRIVATIZATION INITIATIVE (MHPI)  
WHITEMAN AIR FORCE BASE, MISSOURI**

**Prepared by:**



**MAY 2010**



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**Acronyms, Abbreviations, and Symbols**

509 CES/CEAN	Natural Resources Element of the 509th Civil Engineer Squadron
ACAM	Air Conformity Applicability Model
ACM	Asbestos-containing Materials
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFPD	Air Force Policy Directive
C&D	Construction and Demolition
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CSR	Code of State Regulations
CWA	Clean Water Act
CY	Calendar Year
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
FONSI	Finding of No Significant Impact
ft <sup>2</sup>	Square Feet
FY	Fiscal Year
HAZMART	Hazardous Materials Pharmacy
HRMA	Housing Requirements and Market Analysis
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
LBP	Lead-based Paint
lbs	Pounds
MDNR	Missouri Department of Natural Resources
MFH	Military Family Housing
mg/L	Milligrams per Liter
MHPI	Military Housing Privatization Initiative
MILCON	Military Construction
N/A	Not Applicable
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
POLs	Petroleum, Oils, and Lubricants
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SARA	Superfund Amendments and Reauthorization Act
SqFt	Square Feet
SWDA	Solid Waste Disposal Act

SWMD	Solid Waste Management Districts
SWPPP	Storm Water Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
WAFB	Whiteman Air Force Base

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## 1. PURPOSE AND NEED

### 1.1 INTRODUCTION

The United States Air Force (Air Force), Air Combat Command, proposes to privatize its military family housing (MFH) at Whiteman Air Force Base (WAFB), Missouri. The *National Defense Authorization Act of 1996* gives the Department of Defense (DoD) the authority to engage private sector businesses through a process of housing privatization wherein private sector housing developers would renovate or demolish existing housing units, build new units, and provide the infrastructure needed to support such developments. The developer would own the units, lease the land from the Air Force, and collect rent from service members while providing maintenance and management. Government officials have determined that privatization is the best solution for leveraging resources to meet these goals in a timely manner. Additional information and details regarding the military housing privatization initiative (MHPI) can be found on the DoD housing privatization website at <http://www.acq.osd.mil/housing>.

The proposed privatization activities at WAFB are part of a larger privatization effort that includes Malmstrom AFB, Montana, and F.E. Warren AFB, Wyoming. All three bases are grouped together as part of a single privatization Request for Proposal. However, environmental and socioeconomic impacts associated with the privatization action are singular to the respective installations; therefore, impacts associated with privatization at each installation are analyzed in separate National Environmental Policy Act (NEPA) documentation specific to each installation.



Figure 1-1. Existing Older Housing Unit (Midland, 1959)

## **1.2 LOCATION OF THE PROPOSED ACTION**

WAFB is located in west-central Missouri in Johnson County, 65 miles east southeast of Kansas City. Other cities nearby WAFB include Warrensburg (9 miles west), Sedalia (22 miles east), and Windsor (18 miles south). Knob Noster State Park borders the base on the west, and the city of Knob Noster borders the base on the north. The remaining land bordering WAFB to the south and east is primarily used for agriculture. Figure 1-2 shows the location of WAFB and the surrounding area.

## **1.3 PURPOSE AND NEED FOR THE ACTION**

The purpose of the Proposed Action is to provide access to safe, quality, well-maintained housing in a community where Air Force members and their families will choose to live: a community consisting of neighborhood settings that include amenities such as common areas and recreational opportunities (identified as desired features in this document). The Proposed Action is needed to provide a funding mechanism to complete privatized housing efforts at Moody, Hanscom, Little Rock, and Patrick Air Force Bases, as the contractor for all four bases is currently in default. The anticipated outcome would provide a funding mechanism (rental income) via the currently perceived surplus housing located in the North and Central Housing areas located at Patrick AFB.

Determining the specific need for required housing at WAFB involved estimating the number of appropriate private sector housing units available to military families within 20 miles, or a 60-minute commute. This was accomplished by conducting a Housing Requirements and Market Analysis (HRMA) for WAFB in 2005. The HRMA identified the housing units available to military members in the private community and determined the number of units that the Air Force needs to provide at WAFB for its personnel by calendar year (CY) 2010 (U.S. Air Force, 2005). The total MFH requirement for WAFB factored in shortfalls in the available private sector housing, resulting in a housing requirement on WAFB of 932 units. Prior to 2005, and ongoing currently, WAFB began a military construction (MILCON) process to demolish and construct several new homes within the MFH areas. The MILCON process is separate from the MHPI and has been evaluated in previous NEPA documentation. At the conclusion of the MILCON process, WAFB will have a total of 933 housing units (via a combination of older units and newly constructed units) distributed throughout five different housing areas.

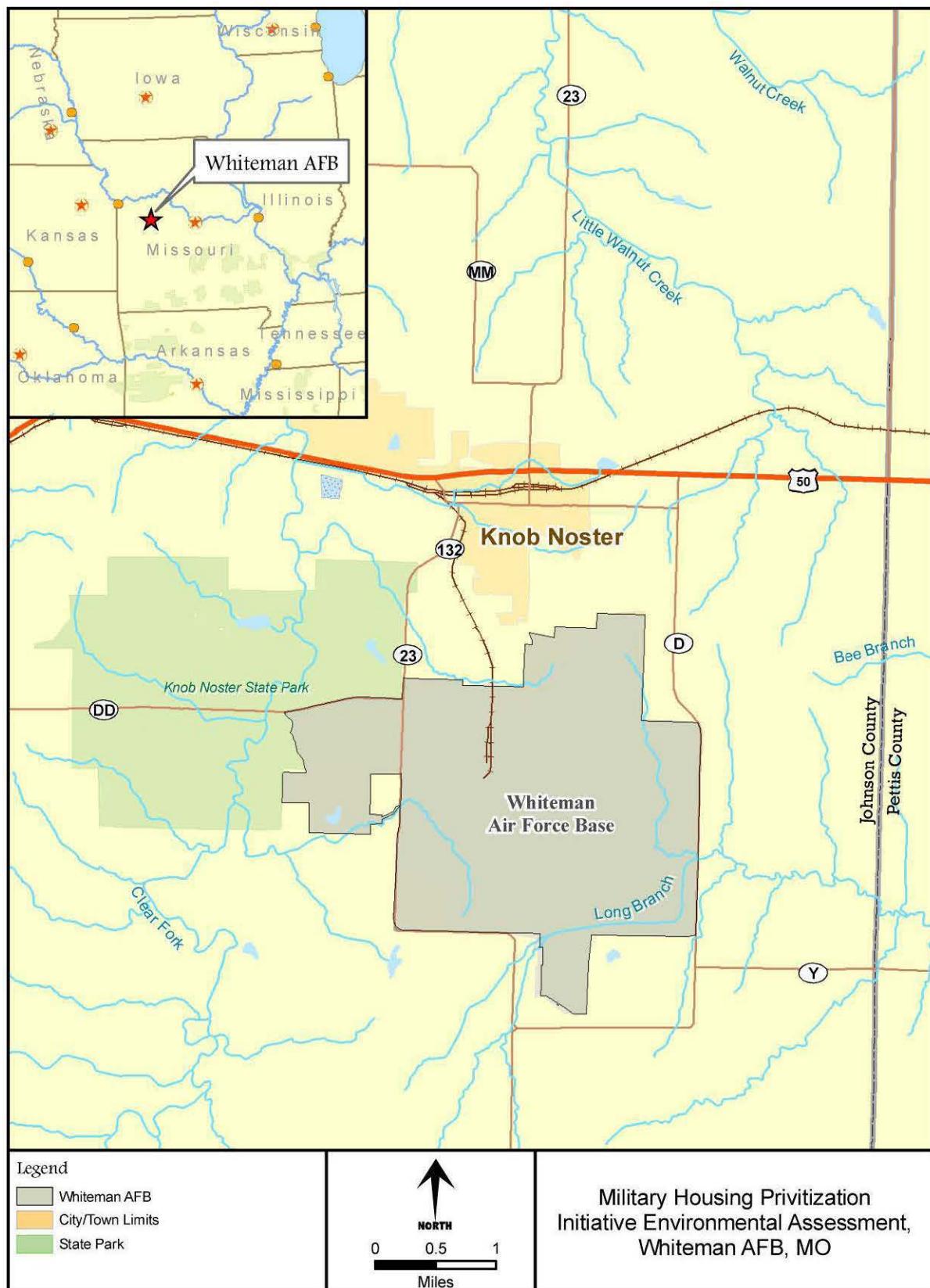


Figure 1-2. Location of Whiteman AFB, Missouri

## **1.4 SCOPE OF THE ENVIRONMENTAL REVIEW**

This Environmental Assessment (EA) identifies, describes, and evaluates the potential environmental impacts that may result from the implementation of MFH privatization under the Proposed Action and the alternatives, as well as the No Action Alternative. As appropriate, the affected environment and environmental consequences of the Proposed Action and alternatives may be described in terms of site-specific descriptions or regional overview. Finally, the EA identifies measures that would prevent or minimize environmental impacts.

Federal agencies are required to consider the environmental consequences of proposed actions in the decision-making process under NEPA, 42 United States Code (USC) 4321, et seq. The Council on Environmental Quality (CEQ) was established under NEPA, 42 USC 4342, et seq., to implement and oversee federal policy in this process. In 1978, the CEQ issued regulations implementing the NEPA process under 40 Code of Federal Regulations (CFR) Parts 1500–1508. The CEQ regulations require that the federal agency considering an action evaluate or assess the potential consequences of the action or alternatives to the action, which may result in the need for an environmental assessment or environmental impact statement. Under 40 CFR:

- An EA must briefly provide sufficient evidence and analysis to determine whether a Finding of No Significant Impact (FONSI) or Environmental Impact Statement (EIS) should be prepared.
- An EA must facilitate the preparation of an EIS if required.

The activities that are addressed within this document constitute a federal action and, therefore, must be assessed in accordance with NEPA. To comply with NEPA, as well as other pertinent environmental requirements, the decision-making process for the Proposed Action will include the development of an EA to address the environmental issues related to the proposed activities. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations and 32 CFR 989, *Air Force Environmental Impact Analysis Process*.

The following environmental features were identified for analysis in this EA: air quality, water resources, soils, hazardous materials, solid waste, and socioeconomics.

### **1.4.1 Issues Not Carried Forward for Detailed Analyses**

Issues with minimal or no impacts were identified through a preliminary screening process. The following describes the issues that were not carried forward for a detailed analysis and the rationale associated with their elimination.

- *Cultural Resources:* Based on interviews with WAFB personnel and survey information in the installation's *Integrated Cultural Resources Management Plan*, no historical, archaeological, or Tribal resources are located within or adjacent to the proposed WAFB MHPI action areas (Golson, 2008; U.S. Air Force, 2002). As a result, there would be no impacts to cultural resources associated with the Proposed Action or alternatives.
- *Biological Resources:* Based on interviews with WAFB personnel and survey information in the installation's *Integrated Natural Resources Management Plan*, no threatened, endangered, or species of concern are located within or adjacent to the proposed WAFB MHPI action areas (Golson, 2008; U.S. Air Force, 2006). Additionally, the housing areas are all improved areas that do not provide habitat for wildlife species, and no undeveloped areas are proposed for use as housing. As a result, there would be no impacts to biological resources associated with the Proposed Action or alternatives.
- *Land Use:* All action areas associated with the MHPI at WAFB are either currently utilized for housing or are improved grounds used for purposes similar to the expected final disposition under the Proposed Action and alternatives. As a result, the Air Force does not anticipate changes in land use designations associated with MHPI, and no impacts to internal or adjacent land uses are expected.
- *Transportation:* For most of the housing areas there would be no changes in current residential traffic. While there may be demolition of roadways in some areas (depending on alternative selected), this is not expected to significantly affect local traffic patterns. Intermittent traffic delays associated with construction activities are ongoing due to current MILCON activities within the housing areas, and some housing unit renovation and/or demolition activities associated with MHPI may result in similar impacts. However, any traffic delays would be temporary in nature, ending once activities have ceased. As a result, the Air Force does not anticipate any significant adverse impacts to WAFB transportation.

- *Utilities and Infrastructure:* Housing area utilities are provided by the installation's utility system. MHPI at Whiteman would result in a small reduction of housing units. However, occupancy at WAFB is such that there would be no net change in the number of personnel living on the installation, and thus no net change in installation utility use on the installation associated with the Proposed Action or alternatives. Existing utility infrastructure would be utilized to the greatest extent possible, and while there may be minor utility infrastructure work conducted at or near specific housing units being renovated, demolished, or constructed, no service interruption to residences would be anticipated.
- *Safety and Occupational Health:* Day-to-day construction operations and maintenance activities conducted at WAFB are performed in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) requirements. Construction and demolition activities on the installation are required to have appropriate job site safety plans, which explain how job safety will be assured throughout the life of the project. Construction and demolition workers are also required to follow applicable Occupational Safety and Health Administration (OSHA) requirements. Occupational health and safety would be governed by the terms of the contract, which may incorporate Air Force regulations and technical orders, AFOSH standards, and OSHA standards. The Air Force does not anticipate impacts to safety, provided that all applicable AFOSH and OSHA requirements are implemented.
- *Noise:* Construction and demolition (C&D) noise would cause a temporary and short-term increase to the ambient sound environment. Workers associated with the construction activities would be expected to wear appropriate hearing protection as required by OSHA. C&D activities associated with the Proposed Action and alternatives would be occurring in areas that either would have no residents within the vicinity of the project activities or in areas that are currently experiencing construction noise due to ongoing MILCON activities. Additionally, project activities would occur during normal business hours and would not result in evening, early morning, or weekend noise issues. As a result, the Air Force does not anticipate impacts to the noise environment.
- *Environmental Justice:* Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires

federal agencies to identify community issues of concern during the NEPA process, particularly those issues relating to decisions that may have an impact on low-income or minority populations. The proposed C&D activities would occur within established areas of WAFB and would not affect communities outside WAFB in any appreciable manner, to include low-income or minority populations. Therefore, the Air Force does not anticipate impacts associated with environmental justice from implementation of the Proposed Action.

## **1.5 APPLICABLE REGULATORY REQUIREMENTS**

### **Environmental Coordination and Public Review**

EO 12372, *Intergovernmental Review of Federal Programs*, requires intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the proponent must notify concerned federal, state, and local agencies and allow them sufficient time to evaluate the potential environmental impacts of a proposed action. Comments from these agencies are subsequently incorporated into the EIAP. NEPA also requires that the government provide the public with an opportunity to review and provide input on the proposal and the potential environmental consequences prior to the government decision regarding a proposed action and alternatives.

The Air Force published a public notice in the *Sedalia Democrat*, *Warrensburg Daily Star Journal*, and the Whiteman AFB newspaper on 31 January 2010 and 3 February 2010, inviting the public to review and comment upon the EA (located at the Trails Regional Library, the Sedalia Public Library and the Whiteman AFB Library). A copy of the display ad is located in Appendix A, Public Involvement. The Air Force also provided the following agencies copies of the EA for review and comment: USEPA Region 7; State of Missouri Federal Assistance Clearinghouse; Missouri State Historic Preservation Office; U.S. Fish and Wildlife Service, Columbia Field Office; and USACE.

The public comment and agency review period ended on 3 March 2010. The only responses received were from the State of Missouri Federal Assistance Clearinghouse and the Missouri State Historic Preservation Office, which both concurred on the FONSI (see Appendix A). No public comments were received on the EA.

## **Environmental Permitting/Coordination Requirements**

Construction under the Proposed Action is anticipated to disturb over 2 acres of land and would require a Land Disturbance Permit for Construction Activities from the Missouri Department of Natural Resources (MDNR).

### **1.6 ORGANIZATION OF THE DOCUMENT**

This EA follows the requirements established by CEQ regulations (40 CFR 1500–1508). This document consists of the following chapters:

1. Purpose and Need
2. Description of Proposed Action and Alternatives
3. Affected Environment and Environmental Consequences
4. Cumulative Impacts
5. Persons and Agencies Contacted
6. List of Preparers
7. References

## **2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

### **2.1 INTRODUCTION**

This chapter describes the process by which the Air Force formulated alternatives for implementing the Proposed Action, the alternatives that the Air Force considered but did not carry forward, and the No Action Alternative. A summary of potential environmental impacts of the Proposed Action and alternatives is provided at the end of this chapter.

### **2.2 PROPOSED ACTION**

The Proposed Action consists of activities associated with the overall proposal for the Air Force to implement the MHPI program at WAFB, Missouri. The WAFB HRMA determined that the installation requires 932 MFH units by CY 2010 (U.S. Air Force, 2005). Currently, the Air Force is replacing existing housing through several MILCON projects that involve demolition of existing housing and construction of new units. At the conclusion of the MILCON projects, 933 units would exist at WAFB (933 units rather than 932 due to construction of required duplex units, resulting in one extra unit) distributed throughout five housing areas. The Proposed Action is to convey all 933 units, as well as related infrastructure (utility lines, roads, etc.) and the Housing Management Office to a private developer who would own and operate the housing units and associated infrastructure and Housing Office. Of these 933 units, the developer would be required to conduct minor repairs (fixing of siding, updating light fixtures and windows, etc.) on 174 units. The developer may, depending on details yet to be determined in the final MHPI proposal, construct several desired features for the housing areas, including community centers and recreational facilities. The alternatives for implementing the Proposed Action are associated with reducing the number of end-state units, which would require the developer to demolish a number of units.

The following activities are associated with the Proposed Action:

- Conveyance of 933 housing units and associated infrastructure
  - Bear Lake: 208 units “as-is”
  - Ridgeview: 140 units requiring minor repairs
  - Lakeside: 213 units “as-is”

- Midland: 104 units
  - 70 units “as-is”
  - 34 units requiring minor repairs
- Woodview: 268 units “as-is”
- End-state units: 933 (932 per HRMA requirement plus extra ½ duplex unit)
- Conveyance of the existing Housing Office “as-is”
- Potential construction of the following desired features:
  - Two community centers, each with indoor swimming pool, fitness area, meeting rooms, and splash pool for toddlers
  - Community-wide and neighborhood-wide recreational facilities in the interior of family housing areas, including basketball courts, tennis courts, volleyball courts, playgrounds, and covered pavilions
  - Widening of 176 driveways at Bear Lake
  - Covered patios for approximately 715 units with integrated outside storage in 237 single-car garage units without basements
  - Covered bus stop shelters throughout conveyed areas
- Lease of the affected real property to the developer for a period of 50 years

Table 2-1 provides a summary of activities associated with the Proposed Action while Figure 2-1 shows the location of existing housing areas and Figure 2-2 shows the location of housing activities associated with the Proposed Action and alternatives.

**Table 2-1. Whiteman AFB MHPI Proposed Action Housing Details**

Existing Housing Area /Facility	Estimated Size of Lease (Acres)	Length of Lease (Years)	Number of Units Conveyed	Max Units Needing Minor Repairs	Max Units Potentially Demolished	Max Units Potentially Constructed	Total End-State Units
Bear Lake	107	50	208	0			933
Ridgeview	57		140	140	0		
Lakeside	98		213	0			
Midland	59		104	34	0		
Woodview	137		268	0			
Housing Office	0.5		Housing Office				
<b>Total*</b>	<b>458.5</b>	<b>N/A</b>	<b>933</b>	<b>174</b>	<b>0</b>		

AFB = Air Force Base; MHPI = Military Housing Privatization Initiative

\*Housing Office not included in unit totals

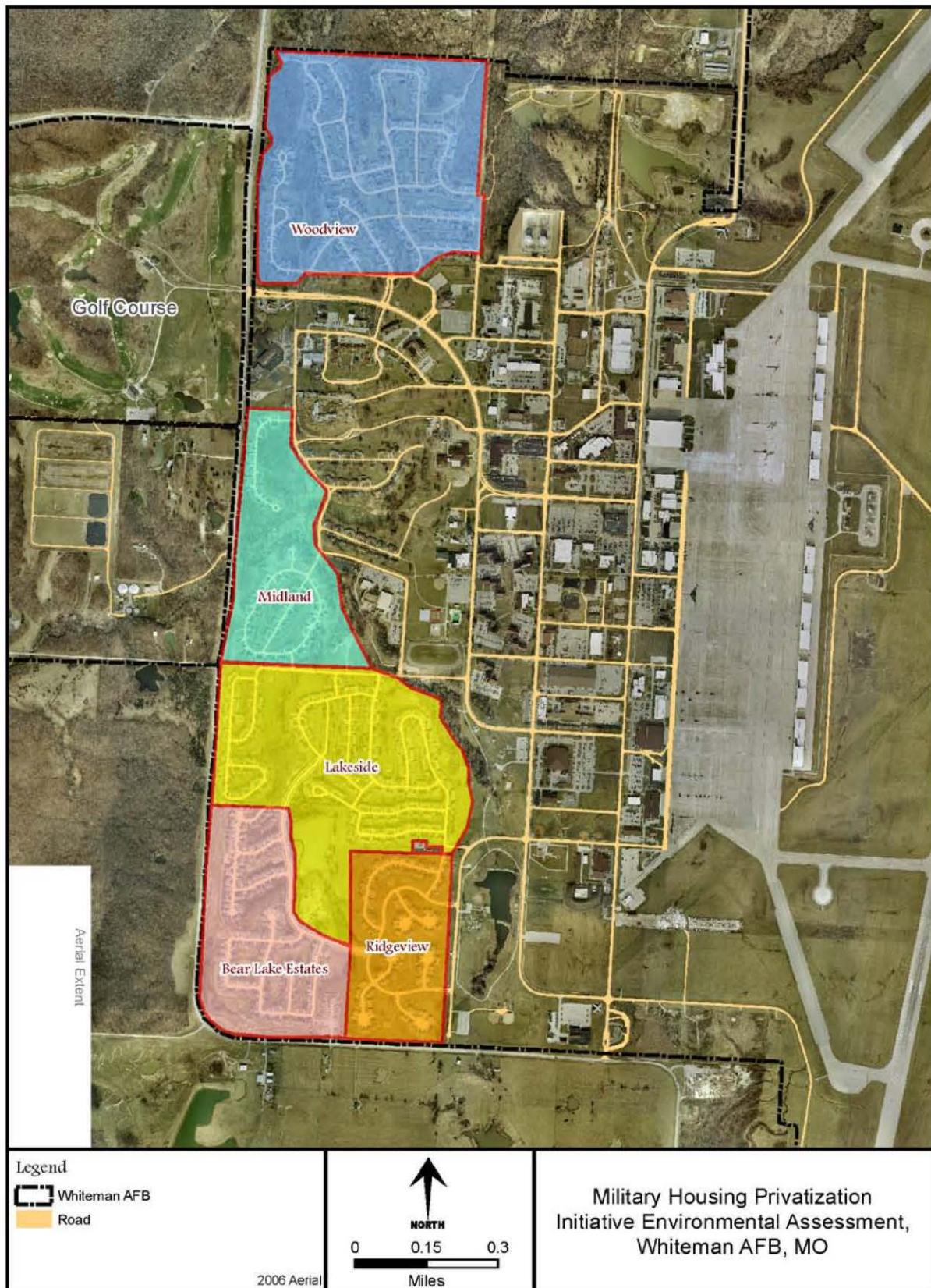


Figure 2-1. Location of Existing Housing at Whiteman AFB

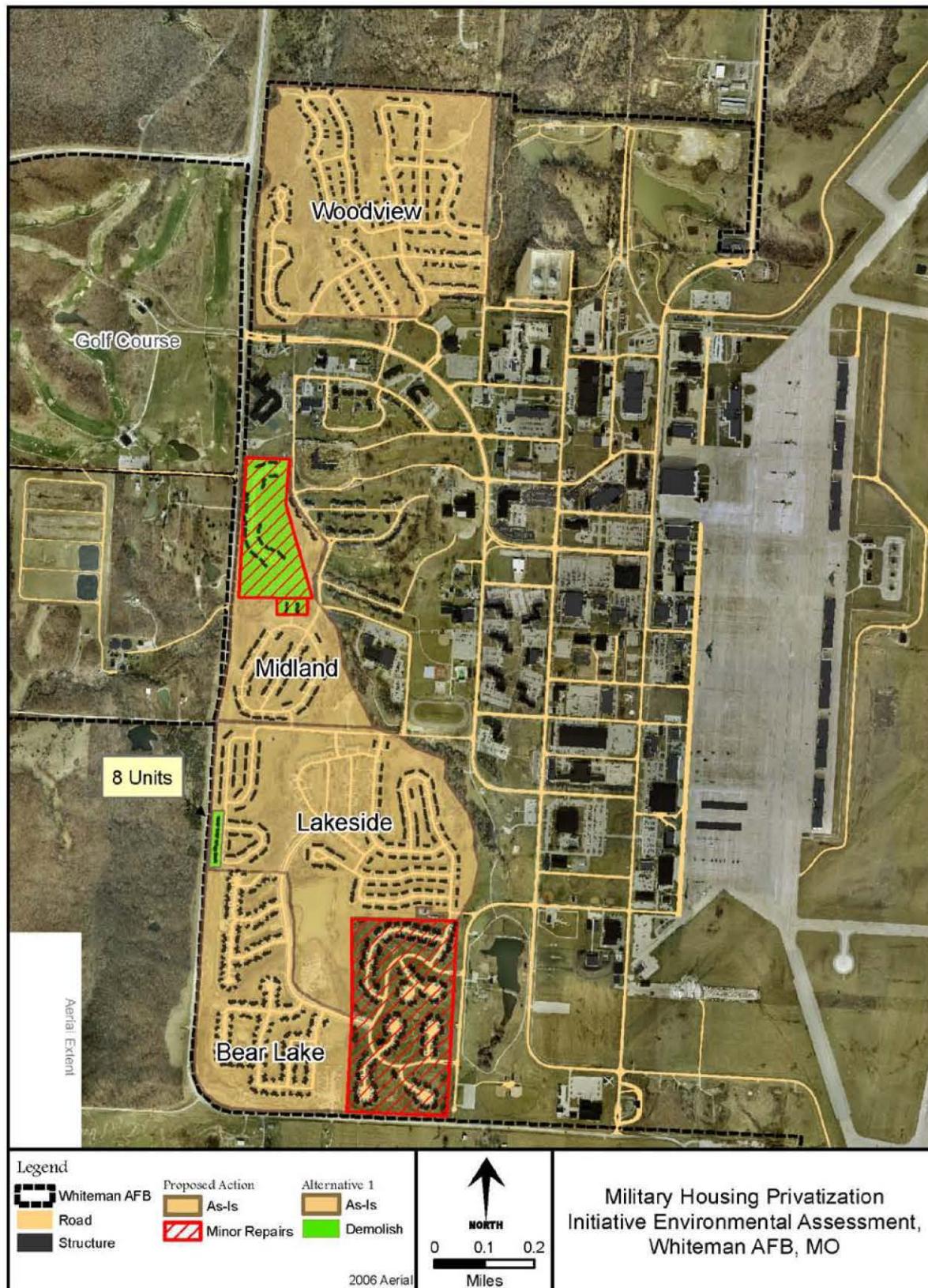


Figure 2-2. Location of Activities Associated With the MHPI Proposed Action and Alternatives

Under the Proposed Action, there would only be minor repairs conducted on some existing housing units and potential construction of some desired features (Figure 2-3). No demolition or construction of housing units or roadways would occur. The most reasonably foreseeable development scenario based on existing housing area logistics and design/layout was utilized for impact analysis. It was assumed that construction of desired features would be within existing housing areas so that areas that are currently undeveloped would not be utilized.



**Figure 2-3. Typical Housing Unit in Ridgeview  
Needing Minor Repairs**

Exactly how a developer would fulfill the desired features list and to what extent (i.e., how large certain items would be) would not be determined until a developer proposal is selected. As a result, the Air Force made assumptions for the square footage of these desired features based on typical size requirements. The scope of the selected MHPI proposal would be evaluated by the Air Force to determine if it is within the scope of analysis in this document and whether additional NEPA analysis would be required. Table 2-2 shows the estimated square footage associated with any potential desired feature new construction that would occur under the Proposed Action.

**Table 2-2. Proposed Action Potential Desired Feature Construction**

Desired Feature	Number of Items	Estimated Square Footage (each)*
Community Center	2	15,000
Basketball Court	4	4,700
Tennis Court	4	7,200
Outdoor Volleyball Court	4	3,700
Driveway Widening	176	40
Covered Bus Stop Shelter	20	100
<b>Total</b>		<b>101,440</b>

\*Based on typical standard-sized facilities.

Currently, WAFB is updating existing housing through MILCON actions that were previously analyzed and approved through separate NEPA analysis. At the end of the MILCON process, nearly all WAFB housing units will have been newly constructed (Figure 2-4) or renovated within the last 10 years. Table 2-3 shows the relationship between previous environmental documentation and current MILCON construction activities.

**Table 2-3. Previous Environmental Documentation for Existing/New Housing**

Housing Area	Environmental Documentation	Year	Date of FONSI Signature
Bear Lake	EA for Construction of Military Family Housing Units, Whiteman AFB, Missouri	April 1996	June 1996
Ridgeview	Air Force Form 813: Replace Military Family Housing	June 2002	N/A
Lakeside			(Categorically Excluded)
Midland	Air Force Form 813: Replace Military Family Housing	March 2005	
Woodview			

AFB = Air Force Base; EA = environmental assessment; FONSI = Finding of No Significant Impact



**Figure 2-4. New Housing (Duplex) Constructed via Military Construction (MILCON)**

The alternatives to the Proposed Action are associated with differences in the number of units that would undergo minor repairs and demolition. No new housing construction would occur under any alternative. The details of each alternative are discussed in the associated section of this chapter.

## **2.3 FORMULATION OF ALTERNATIVES FOR IMPLEMENTING THE PROPOSED ACTION**

Alternatives for implementing the MHPI program at WAFB were developed with consideration of the ongoing MILCON activities associated with existing housing. Since the majority of housing will be constructed via MILCON and then conveyed to the developer, alternatives were developed to address the units remaining that would potentially be surplus or would need minor repairs.

## **2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED**

Since nearly all of the housing units that would be owned and operated under privatization will be either newly constructed or renovated already through ongoing MILCON projects, alternatives associated with developing new housing areas were not considered as part of the MHPI program. Instead, alternatives associated with the disposition of housing units that would not be affected by ongoing MILCON activities are considered in this EA.

## **2.5 ALTERNATIVES CARRIED FORWARD FOR ANALYSIS**

Based on the facility and location requirements described previously, the Air Force has identified the following alternatives for implementing the Proposed Action.

Figure 2-2 shows the locations of each alternative.

### **2.5.1 Alternative 1: 891 End-State Units**

The difference between the Proposed Action and this alternative is that, rather than conduct minor repairs, the Air Force would demolish eight units at Lakeside and four units at Midland via an additional MILCON, thus conveying 921 units. The developer or the Air Force would then demolish an additional 30 units at Midland. The end state would then be 891 units after demolition of 42 units total. The developer would conduct minor repairs on 140 units rather than 174. In addition, added to the list of desired features would be a new Housing Maintenance Facility. The land associated with the 30 units at Midland would be returned to the government once demolition is completed.

It is unknown exactly how much square footage of additional impervious surface area (i.e., driveways, patios, sidewalks) is associated with the units that would be demolished. As a result, the Air Force made assumptions for the square footage of the impervious surfaces associated with the units that would be demolished; the average impervious surface area associated with each unit would be approximately 1,275 square feet. Within Midland there would also likely be demolition of roadways associated with the 30 units that would be demolished. While it is also unknown where the developer might construct a new Housing Maintenance Facility or the other desired features, it is assumed that construction would occur within already developed areas. For purposes of this EA, the Air Force assumed that the Housing Maintenance Facility would be approximately 4,700 square feet. Table 2-4 shows the activities associated with Alternative 1 housing while Table 2-5 shows the square footage estimates associated with Alternative 1.

**Table 2-4. Whiteman AFB MHPI Alternative 1 Housing Details**

Existing Housing Area /Facility	Max Units Potentially Demolished Prior to Conveyance	Estimated Size of Lease (Acres)	Length of Lease (Years)	Number of Units Conveyed	Max Units Needing Minor Repairs	Max Units Potentially Demolished	Max Units Potentially Constructed	Total End-State Units
Bear Lake	0	107	50	208		0		891
Ridgeview	0	57		140	140	0		
Lakeside	8	98		205		0		
Midland	4	38		100	0	30	0	
	0	21	2**					
Woodview	0	137	50	268		0		
Housing Office	N/A	0.5		Housing Office				
<b>Total*</b>	<b>12</b>	<b>458.5</b>	<b>N/A</b>	<b>921</b>	<b>140</b>	<b>30</b>	<b>0</b>	

AFB = Air Force Base; MHPI = Military Housing Privatization Initiative

\*Housing Office not included in unit totals

\*\*Dependent on time taken for developer to demolish units

**Table 2-5. Alternative 1 Housing Unit Potential Demolition and Additional Desired Feature Construction**

Housing Area	Potential Demolition			
	# Units	Gross Square Footage / Unit	Additional Impervious Surface Area / Unit (SqFt)	Total Demolished (SqFt)
Lakeside	8	1,228.5		20,028
Midland	16	1,134	1,275	38,544
	18	1,148		43,614
	Roadway		N/A	38,293
<i>Total</i>	<i>42*</i>	<i>N/A</i>	<i>N/A</i>	<b><i>140,479</i></b>
Potential Construction				
Facility (unit)				Total Estimated Gross Square Footage
Housing Maintenance Facility (1)				4,700
Housing Maintenance Facility Parking				2,000
Community Center (2)				30,000
Basketball Court (4)				18,800
Tennis Court (4)				28,800
Driveway Widening (176)				7,040
Covered Bus Stop Shelter (20)				2,000
Outdoor Volleyball Court (4)				14,800
<i>Total</i>				<b><i>108,140</i></b>

\* The eight units at Lakeside and four of the Midland units would be demolished by the Air Force prior to conveyance.

## 2.5.2 No Action Alternative

Under the No Action Alternative, the Air Force would not implement the MHPI program at WAFB and would manage and maintain existing and newly constructed housing in accordance with existing Air Force policy. Currently, 174 units (140 at Ridgeview and 34 at Midland) require minor repairs; these units would receive minor repairs regardless of MHPI and such activities are therefore a component of the No Action Alternative. New housing construction via ongoing MILCON activities would continue until completed. Ongoing housing MILCON replacement was previously assessed and approved through the NEPA process.

## 2.6 ALTERNATIVE SUMMARY

**Table 2-6. Alternative Summary**

Alternative	Estimated Size of Leased Area (Acres)*	Length of Lease (Years)	Number of Units Conveyed**	Units Conveyed "as-is"***	Max Units Needing Minor Repairs	Max Units Potentially Demolished		Total End-State Units
						Prior to Conveyance	After Conveyance	
<i>Proposed Action</i>	458.5	50*	933	759	174	0	0	<b>933</b>
<i>Alternative 1</i>			921	781	140	12	30	<b>891</b>
<i>No Action</i>			0		174	0	0	<b>933</b>
<b>Total Estimated Square Footage***</b>						<b>Demolished</b>	<b>Constructed</b>	
						<i>Facilities</i>	<i>Roads</i>	<i>Facilities</i>
						0	0	101,440
						<i>Proposed Action</i>	<i>Alternative 1</i>	<i>No Action</i>
						102,186	38,293	108,140
						0	0	0

\*21 acres at Midland would be returned to the Air Force after demolition of 30 units under Alternative 1

\*\*Does not include the existing Housing Office

\*\*\*Includes 1,275 square feet of additional impervious surface area per housing unit/building and potential construction of new Housing Maintenance Facility and other desired features

**Table 2-7. Alternative Impact Summary and Comparison**

Resource / Issue Area	Alternatives		
	Proposed Action	Alternative 1: 891 End-State Units	No Action
Air Quality	Impacts associated with air quality are mainly the result of minor, short-term increases in fugitive dust emissions from construction and demolition activities. These emissions would cease once project activities are concluded. No significant impacts have been identified.		No impacts are anticipated should the No Action Alternative occur.
Water Resources	No impacts to groundwater quality are anticipated with the implementation of the Proposed Action or alternatives. Construction or demolition activities greater than 1 acre would require a Land Disturbance Permit from the Missouri Department of Natural Resources. No floodplain or wetland impacts are anticipated.		
	Only minimal impacts to surface water resources would be anticipated should the entire 2.3 acres of proposed construction of desired features occur. These impacts would include minor sedimentation and erosion and would be minimized with best management practices associated with the installation's Storm Water Pollution Prevention Plan.	There is the potential for additional short-term impacts under Alternative 1 due to the increased construction and demolition footprint. These impacts would be minimized with best management practices. In the long term the removal of impervious surfaces due to demolition would have minor positive impacts to surface water resources.	No impacts are anticipated should the No Action Alternative occur.
Soils	No adverse impacts to soil resources are anticipated. A Land Disturbance Permit would be required from the Missouri Department of Natural Resources for construction and demolition activities over 1 acre.		
	Approximately 2.3 acres of land would be disturbed. No adverse impacts to soil resources are anticipated.	Approximately 8 acres of land would be disturbed. No adverse impacts to soils are anticipated.	No impacts are anticipated should the No Action Alternative occur.

**Table 2-7. Alternative Impact Summary and Comparison, Cont'd**

Resource / Issue Area	Alternatives		
	Proposed Action	Alternative 1: 891 End-State Units	No Action
<i>Hazardous Materials &amp; Waste</i>	<p>Hazardous materials utilized during demolition/construction (i.e., fuels, lubricants) would be stored in proper containers, employing secondary containment as necessary to prevent and limit accidental spills. All spills and accidental discharges of petroleum products, hazardous materials, or hazardous waste would be reported and mitigated as required by the WAFB Hazardous Waste Management Plan and the Spill Prevention, Control, and Countermeasures Plan.</p> <p>Construction activities associated with the Proposed Action and alternatives would not be expected to generate hazardous wastes; however, renovation and demolition of older housing units could result in the production of lead-based paint or asbestos wastes. The management of these wastes would be performed according to prescribed procedures already in place, which are designed to prevent or reduce pollution, reduce safety and health risks, and recycle wastes when possible. Wastes that cannot be recycled would be disposed of in a manner approved by the USEPA, at licensed facilities. The Air Force does not expect significant impacts.</p>		
<i>Solid Waste</i>	The Proposed Action is not expected to generate significant quantities of debris or wastes associated with housing maintenance activities. Facility upgrades are expected to only generate approximately 70 tons of debris. Due to this fact, the Proposed Action is not anticipated to have an impact on available solid waste resources within the ROI.	It is estimated that approximately 4,493 tons of debris would be generated from demolition and construction activities associated with this alternative. Based upon the design capacity of the landfill resource within the ROI the waste is estimated to constitute 0.18% of the landfill design capacity and is expected to have a negligible impact upon landfill resources within the area.	Under the No Action Alternative the only activities anticipated to be conducted within the housing areas is the minor maintenance of housing units. Because no major construction, demolition, or renovation would occur the alternative is not anticipated to impact solid waste resources within the ROI as the quantity of waste expected would be negligible.
<i>Socioeconomics</i>	The Air Force has not identified any significant socioeconomic impacts associated with the Proposed Action or alternatives. Minor beneficial impacts would be realized via job creation and expenditures in the local economy.		

### **3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

#### **3.1 AIR QUALITY**

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The levels of pollutants are generally expressed on a concentration basis in units of parts per million or micrograms per cubic meter.

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards and state air quality standards. These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare.

##### **3.1.1 Affected Environment**

The Region of Influence (ROI) for the air quality analysis centers on Johnson County, Missouri, where WAFB is located. As set forth in 40 CFR § 81.326, Johnson County is in attainment status for all criteria pollutants (U.S. Environmental Protection Agency [USEPA], 2008), and monitoring data shows generally good air quality (MDNR, 2008).

Johnson County emissions obtained from the USEPA's 2002 National Emissions Inventory (NEI) are presented in Table 3-1. The county data includes emissions data from point sources, area sources, and mobile sources. *Point sources* are stationary sources that can be identified by name and location. *Area sources* are point sources whose emissions are too small to track individually, such as a home or small office building or a diffuse stationary source, such as wildfires or agricultural tilling. *Mobile sources* are any kind of vehicle or equipment with gasoline or diesel engine, an airplane, or a ship. Two types of mobile sources are considered: on-road and non-road. On-road consists of vehicles such as cars, light trucks, heavy trucks, buses, engines, and motorcycles. Non-road sources are aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles (USEPA, 2005).

**Table 3-1. Baseline Emissions Inventory for Johnson County**

Source Type	Emissions (tons/year)				
	CO	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>2</sub>	VOC
Area Source	1,568	196	24,948	236	1,192
Non-Road Mobile	2,815	779	12,390	70	330
On-Road Mobile	14,826	1,698	12,433	69	1,138
Point Source	47	79	41	8	63
<b>Total</b>	<b>19,255</b>	<b>2,752</b>	<b>49,813</b>	<b>383</b>	<b>2,723</b>

Source: USEPA, 2002

CO = carbon monoxide; NO<sub>x</sub> = nitrogen oxides; PM<sub>10</sub> = particulate matter with a diameter of less than or equal to 10 microns; SO<sub>2</sub> = sulfur dioxide; VOC = volatile organic compounds

### 3.1.2 Analysis Methodology

The focus of the air analysis was on construction and demolition activities, which are the main issues generated by the Proposed Action and alternative. This includes emissions from heavy construction machinery, tractor-trailer rigs, dust (particulate matter) from demolition, and vehicle exhaust from contracted employees' personal vehicles. In order to evaluate the air emissions and their impact to the overall ROI, the emissions associated with the project activities were compared to the total emissions on a pollutant-by-pollutant basis for the ROI's 2002 NEI data (U.S. Air Force, no date). Although Johnson County is an attainment area, for which a general conformity determination is not required, the General Conformity Rule's impact analysis methodology was utilized to provide a consistent approach to evaluating the impact of construction. To provide a more conservative evaluation, the impacts screening in this analysis used more restrictive criteria than required in the General Conformity Rule. Rather than comparing emissions from construction activities to regional inventories (as required in the General Conformity Rule), emissions were compared to the individual county (Johnson) potentially impacted, which is a smaller area.

The DoD-developed Air Conformity Applicability Model (ACAM), used by the U.S. Air Force for conformity evaluations, was utilized to provide a level of consistency with respect to emissions factors and calculations. Air emissions estimated using ACAM are compared to the established 10-percent criterion for Johnson County as represented in the NEI (USEPA, 2002). Emissions associated with construction and demolition activities are the main issues generated by the Proposed Action and were the focus of the air analysis. Air quality issues associated with operational activities at WAFB after the completion of construction are not included in this evaluation.

### **3.1.3 Environmental Consequences**

The air analysis focused on the effects of construction and demolition of housing and associated pavement activities. Construction projects were assumed to be completed during fiscal year (FY) 2010.

#### **3.1.3.1 Proposed Action**

The Proposed Action includes the construction of 101,440 square feet for features such as community centers, various ball courts, driveway widening, and covered bus stop shelters. It was assumed that no grading would be necessary as all construction would take place on land previously disturbed. Emissions were compared to Johnson County emissions to determine significance (Table 3-2).

**Table 3-2. Proposed Action Emissions Compared to Johnson County Emissions**

Emission Activities	Emissions (tons/year)				
	CO	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>2</sub>	VOC
Construction Emissions	17.92	5.83	0.45	0.69	1.23
Point Source	0.08	0.10	0.01	0.00	0.01
Mobile Source	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>18.00</b>	<b>5.93</b>	<b>0.46</b>	<b>0.69</b>	<b>1.24</b>
Johnson County Emissions	19,255.40	2,751.56	49,813.38	383.25	2,722.76
Percentage of County Emissions	0.09%	0.22%	0.00%	0.18%	0.05%

CO = carbon monoxide; NO<sub>x</sub> = nitrogen oxides; PM<sub>10</sub> = particulate matter with a diameter of less than or equal to 10 microns; SO<sub>2</sub> = sulfur dioxide; VOC = volatile organic compounds

There would be a slight temporary increase in air emissions during construction activity. Even under a conservative analysis approach, all emissions would be less than 1 percent of the total county emissions. As a result, the Air Force anticipates no adverse impact to regional air quality under the Proposed Action.

#### **3.1.3.2 Alternative 1: 891 End-State Units**

Alternative 1 would require 108,140 square feet of construction and a total demolition of housing units and impervious surfaces of 140,479 square feet. Emissions were calculated assuming all construction and demolition would be completed in a single year and are compared to the county emissions in Table 3-3.

**Table 3-3. Alternative 1 Emissions Compared to Johnson County Emissions**

Emission Activities	Emissions (tons/year)				
	CO	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>2</sub>	VOC
Construction Emissions	20.55	6.68	0.71	0.79	1.40
Point Source	0.10	0.12	0.01	0.00	0.01
Mobile Source	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>20.65</b>	<b>6.80</b>	<b>0.72</b>	<b>0.79</b>	<b>1.41</b>
Johnson County Emissions	19,255.40	2,751.56	49,813.38	383.25	2,722.76
Percentage of County Emissions	0.11%	0.25%	0.00%	0.21%	0.05%

CO = carbon monoxide; NO<sub>x</sub> = nitrogen oxides; PM<sub>10</sub> = particulate matter with a diameter of less than or equal to 10 microns; SO<sub>2</sub> = sulfur dioxide; VOC = volatile organic compounds

Due to increased construction and demolition activities, the air emissions for Alternative 1 would be higher than those projected for the Proposed Action. Emissions would be less than 1 percent of Johnson County emissions in this conservative analysis. The Air Force expects no adverse impacts to regional air quality under Alternative 1.

### **3.1.3.3 No Action Alternative**

The No Action Alternative would involve only minor renovations to some units, with no construction or demolition included in this alternative. Thus, air quality would not be affected by this alternative. No impacts are expected to regional air quality under the No Action Alternative.

## **3.2 WATER RESOURCES**

Water resources analyzed in this section include surface water and groundwater quantity and quality. Surface water resources include lakes, rivers, and streams and are important for a variety of reasons, including economic, ecological, recreational, and human health. Groundwater resources include subsurface hydrologic resources of the physical environment and are an essential resource in some regions. Groundwater properties are often described in terms of depth to aquifer or water table, water quality, and surrounding geologic composition.

Other issues relevant to water resources include the downstream water and watershed areas affected by existing and potential runoff as well as hazards associated with 100-year floodplains. Floodplains are defined by EO 11988, *Floodplain Management*, as "the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, the area subject to a one

percent or greater chance of flooding in any given year" (that area inundated by a 100-year flood). Floodplain values include natural attenuation of floods, water quality maintenance, groundwater recharge, and habitat for many plant and animal species.

Section 404 of the Clean Water Act (CWA) established a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. EO 11990, *Wetlands Management*, requires all federal agencies to avoid negatively impacting wetlands whenever possible.

The ROI for water resources in this EA is considered to be the boundaries of WAFB and surface water resources immediately adjacent to WAFB.

### **3.2.1 Affected Environment**

#### **3.2.1.1 Surface Water**

WAFB is located in the Gasconade-Osage Rivers Subregion of the Missouri River Drainage Basin. The base lies on a divide that separates the Blackwater River Watershed to the west from the Lamine Watershed to the east. Both of these watersheds drain to the Lamine River and then into the Missouri River. According to the *WAFB Storm Water Pollution Prevention Plan* (SWPPP) approximately 27 percent or 1,129 acres of the 4,183-acre base consists of impervious surface (U.S. Air Force, 2000).

Several ponds of various sizes have been constructed throughout WAFB. Five of the larger ponds located in proximity to the housing areas include Skelton Lake, Bear Lake, North Lake, and two unnamed ponds (Figure 3-1). Two of these ponds are located within the housing areas. Bear Lake is located in the southwest corner of WAFB in Bear Lake Estates, and one unnamed pond is located in the Midland housing area in the west central portion of WAFB. Skelton Lake, which consists of two small ponds, is located in the southwest corner of WAFB to the east of the Ridgeview housing area. North Lake is located in the northwest corner of WAFB to the east of the Woodview housing area. A second unnamed pond is located to the west and downstream of North Lake. These ponds were all constructed for storm water detention.

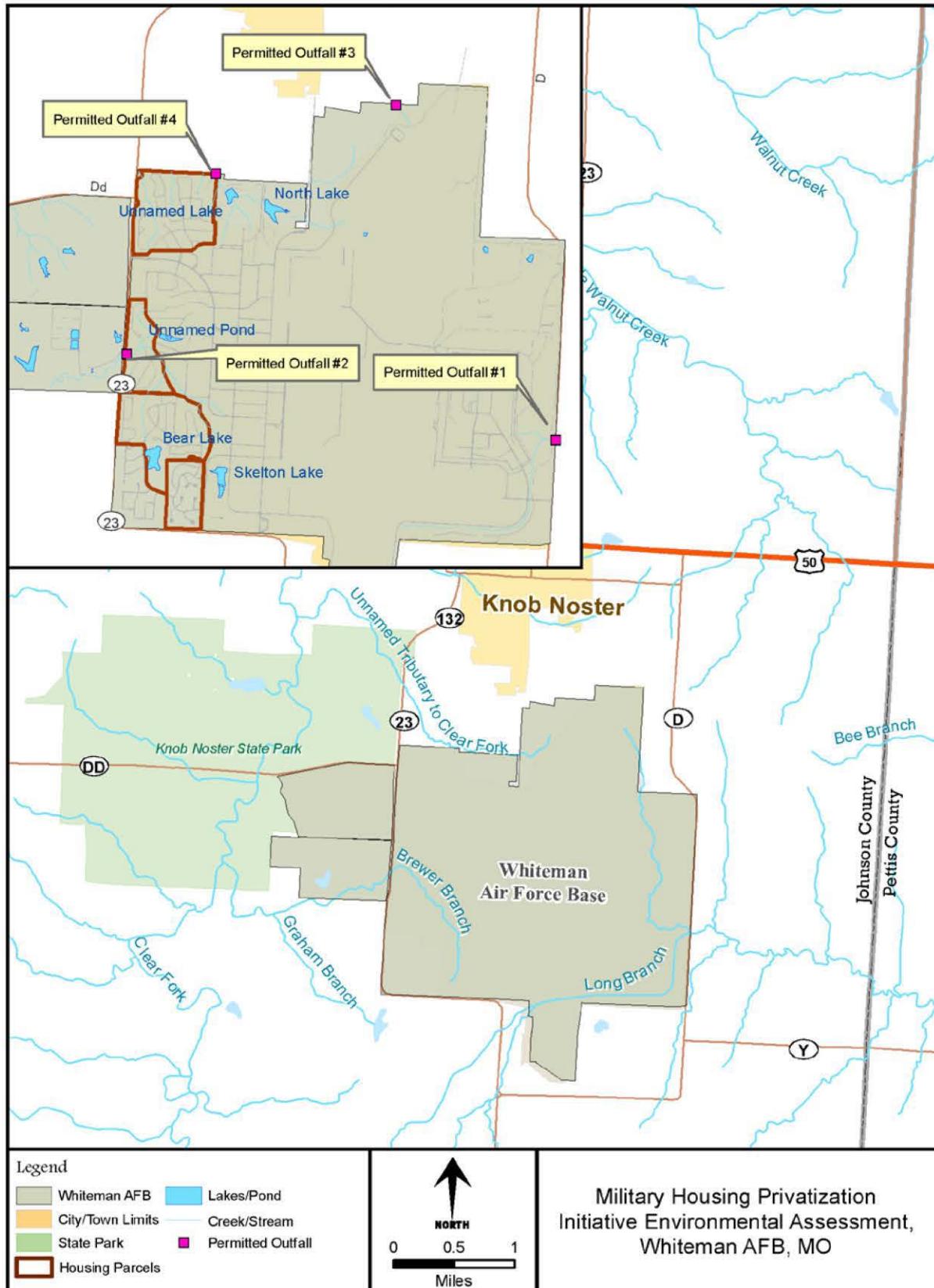


Figure 3-1. Surface Water Resources at Whiteman AFB

Storm water at WAFB is conveyed through a series of ditches, cross road culverts, enclosed pipe drainage systems, and natural stream channels. The airfield portion of WAFB is relatively level and storm water is conveyed primarily by inlets and an enclosed storm sewer system with some roadside ditches. Residential areas are located along the watershed divide and storm water is conveyed by curbed and guttered streets with inlets that convey runoff a short distance to natural stream channels.

To manage on-installation storm water runoff and protect the quality of surface water on and in the vicinity of the installation, WAFB has been issued a National Pollutant Discharge Elimination System (NPDES) General Storm Water Permit by the State of Missouri. In order to comply with the requirements of this permit, WAFB has prepared and implemented a SWPPP. The SWPPP describes the best management practices utilized by WAFB to minimize both storm water runoff and the potential for contaminants in storm water runoff. The SWPPP also outlines the water quality monitoring requirements for four of the 17 storm water outfalls located at WAFB. These four permitted outfalls receive the majority of storm water runoff from the industrial areas of WAFB (U.S. Air Force, 2000). A brief description of the permitted outfalls is discussed below and locations are shown in Figure 3-1.

State Permitted Outfall 001 is the outfall for storm water runoff from the eastern base and includes the airfield portion of WAFB. The airfield consists of runways, taxiways, storage, and maintained grassland. Storm water from this outfall discharges to Long Branch Creek in the Lamine River Watershed.

State Permitted Outfall 002 is the discharge point for storm water from storm drains located in WAFB housing areas (Midland, Lakeside, and Bear Lake Estates). Storm water from this outfall is conveyed to Brewer Branch in the Blackwater River Watershed. Brewer Branch combines with Graham Branch before entering Clear Fork in Knob Noster State Park.

State Permitted Outfall 003 is the outfall for storm water runoff from the northern portion of the airfield area, including the North Ramp and the alert facility. Storm water from this outfall discharges to an unnamed tributary of Clear Fork in the Blackwater River Watershed.

State Permitted Outfall 004 is the discharge point from North Lake and from the portion of the airfield used for deicing. This outfall also receives runoff from the northern portion of the WAFB housing area (Woodview). Storm water from this outfall

is conveyed to an unnamed tributary of Clear Fork in the Blackwater River Watershed. This tributary flows through Knob Noster State Park before joining Clear Fork.

WAFB maintains a Spill Prevention, Control, and Countermeasure (SPCC) Plan (U.S. Air Force, 1997) that identifies procedures for preventing spills of oils or hazardous materials. If a spill should occur, the SPCC identifies procedures for spill detection, reporting, containment, clean up, and disposal.

### **3.2.1.2 Groundwater**

WAFB is located in the Springfield Plateau groundwater province. The three major aquifers located in this province include the St. Francois, Ozark, and Springfield aquifers (Miller, 1997). WAFB utilizes a series of 10 groundwater wells to draw the majority of its potable water supply from the deep (560 to 1,000 feet) confined Ozark aquifer. Groundwater is contained in Ordovician (Jefferson City Dolomite, Roubidoux Formation, and Gasconade Dolomite) and Cambrian (Eminence Dolomite and Lamotte Formation) age bedrock. Groundwater movement in the deeper aquifers is generally north to northwest. Shallow groundwater is also present at WAFB but is not used for water supplies due to poor quality or unreliable production capacity.

### **3.2.1.3 Floodplains and Wetlands**

The southeastern corner of WAFB is located within the 100-year floodplain of Long Branch Creek. This floodplain is located outside of the WAFB housing area.

A basewide wetland delineation was conducted at WAFB in 1995. The resulting wetlands delineation report identified 88 acres of nonjurisdictional wetlands at WAFB (U.S. Force, 2006; Golson, 2008). No floodplains or jurisdictional wetlands were identified within the housing areas at that time. In 2009, as part of an unrelated project, the Kansas City District of the U.S. Army Corps of Engineers (USACE) conducted another jurisdictional wetland delineation for the Bear Lake area and identified the lake, the wetlands within the lake, and the entire stream reach as jurisdictional waters (Golson, 2009).

## **3.2.2 Analysis Methodology**

Evaluation criteria for impacts associated with implementation of the Proposed Action on water resources are based on water availability, quality, and use; existence of floodplains and wetlands; and associated regulations. Implementation of the Proposed Action would have adverse effects if it were to do one or more of the following:

- Reduce water availability to or interfere with the supply of existing users;
- Create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources;
- Substantially affect water quality adversely;
- Endanger public health by creating or worsening adverse health hazard conditions;
- Threaten or damage unique hydrologic resources; or
- Violate established laws or regulations that have been adopted to protect or manage water resources of an area.

Impacts of flood hazards related to proposed actions can be significant if such actions are in areas with high probabilities of flooding or in some way alter flood conveyance.

### **3.2.3 Environmental Consequences**

The primary water resource concerns associated with implementing the Proposed Action include effects on water quality and quantity during and after demolition and construction activities and changes to surface water drainage due to increased impervious surfaces.

#### **3.2.3.1 Proposed Action**

Under the Proposed Action, approximately 101,440 square feet (2.3 acres) of new construction associated with desired features would occur. The majority of this construction is anticipated to occur in portions of WAFB that have been previously disturbed by prior construction activities. If this construction were to occur in areas that are undeveloped, then 2.3 acres of impervious surfaces would be added to WAFB's watershed. If the entire list of construction projects were completed on undeveloped areas, the 2.3 acres of impervious surface would represent a 0.2 percent increase in impervious surface.

Surface water could potentially be affected by sedimentation when bare soils are exposed to wind and water erosion. Soil erosion from potential construction of recreational facilities could be carried into surface water systems and increase sedimentation. These types of sedimentation impacts could increase turbidity in surface waters that are downstream of construction activities. These types of impacts

are temporary in nature and would be minimized by implementing best management practices (BMPs). The SWPPP outlines several BMPs such as permanent seeding, mulching, silt fence, straw barrier, filter strips, and storm drain inlet protection that could be implemented to minimize soil erosion and sedimentation. Once construction activities have been completed and soils have been stabilized, the potential for sedimentation related impacts would cease. There is also the short-term potential of oil or other petroleum spills occurring during construction activities and contaminating surface water resources. The potential for these spills would be minimized by implementing BMPs and following WAFB's SPCC plan.

Knob Noster State Park is located downstream of the proposed construction sites. Steps to minimize erosion and sedimentation, including the implementation of BMPs, would minimize the potential of adverse impacts to streams within the boundaries of the State Park.

The MDNR issues a specific Land Disturbance Permit for construction activities that impact 1 or more acres of land. Construction under the Proposed Action is anticipated to disturb over 2 acres of land and would require a Land Disturbance Permit.

No impacts are anticipated to the groundwater aquifers that currently provide potable water to WAFB. Any construction activities would be shallow when compared to the depth of the aquifers (greater than 500 feet) and would not intersect these drinking supply aquifers. There is the potential that a spill of oil or other petroleum products could occur during construction and contaminate shallow groundwater resources at WAFB. These potential impacts are considered short-term and the risk of such spills would be minimized by implementing BMPs and following WAFB's SPCC plan. Water supplies for WAFB are drawn from the Ozark aquifer. In terms of groundwater production, this is the largest aquifer in southwest Missouri (Miller, 1997). The development of the recreational facilities, including a 10,000-gallon pool, is not anticipated to have more than a minor impact on the capacity of this aquifer.

No activities are planned within wetland areas under the Proposed Action. Impacts are not anticipated to the Bear Lake jurisdictional waters given the implementation of BMPs and other erosion control requirements associated with construction activities that serve to minimize erosion and runoff-related impacts to adjacent water bodies and wetlands.

### **3.2.3.2 Alternative 1: 891 End-State Units**

Potential impacts to surface water and groundwater would be comparable to those described under the Proposed Action. The primary difference between the Proposed Action and Alternative 1 would be the amount of construction and demolition activities that could occur. Under Alternative 1, demolition activities would result in an additional 140,479 square feet (3.2 acres) of pervious surface. Construction activities would result in an additional 108,140 square feet (2.48 acres) of impervious surfaces. This increase in the construction and demolition footprint would increase the short-term potential for surface water impacts due to erosion and sedimentation.

In the long term under Alternative 1, there would be a net gain of 32,339 square feet (0.75 acres) of pervious surfaces resulting in a potential positive impact to surface water resources due to a slight decrease in storm water runoff. This decrease in storm water runoff would also increase groundwater recharge in the shallow groundwater at WAFB. There would be no change to the deeper aquifer used for water supply.

### **3.2.3.3 No Action Alternative**

Under the No Action Alternative, the Air Force would not implement the MHPI program at WAFB. Surface water and groundwater resources at WAFB would remain as described in Section 3.2.1, and no impacts are expected to water resources under the No Action Alternative.

## **3.3 SOILS**

The term “soil” refers to unconsolidated materials overlying bedrock or other parent material. Soils play a critical role in both the natural and human environment. Soil structure, elasticity, strength, shrink-swell potential, and erodibility all determine the ability of the ground to support man-made structures and facilities, to provide a landscaped environment, and to control the transport of eroded soils into nearby drainages. In undeveloped areas the quality and productivity of soil are a critical component of agricultural production. The ROI for soil resources includes the MHPI portion of WAFB where construction activities could potentially occur.

### **3.3.1 Affected Environment**

Four soil series underlie approximately 75 percent of the housing project area. Mandeville silt loams are moderately deep (20 to 40 inches), well and moderately well drained, moderately permeable soils. They formed in the residuum weathered from acidic shales and are located on ridgetops and side slopes with slopes of 2 to 9 percent. Gorin silt loams are deep (40 to 60 inches) soils, somewhat poorly drained, slowly permeable, and formed in loess and loamy sediments. These soils are located on ridgetops with slopes ranging from 2 to 14 percent. Weller silt loams are deep (40 to 60 inches) soils, moderately well drained, slowly permeable soils that formed in loess. These soils may be found on uplands and high stream benches with slopes ranging from 0 to 14 percent. Sampsel silt loams are deep (40-60 inches) and very deep (greater than 60 inches) soils, poorly drained, and slowly permeable. They formed in alkaline or calcareous shale or from colluviums and alluvium from shale and associated materials. These soils are found on gently or strongly sloping uplands with slopes of 2 to 14 percent. Based on the physical characteristics of all of these soil types, the potential for erosion due to water is considered moderate and erosion due to wind is slight (Natural Resources Conservation Service, 2009).

Other soils underlying the housing area include Deepwater and Norris silt loams. These two soils combined cover approximately 15 percent of the housing area. These soils are well drained or moderately well drained. The remaining soil types in the housing area are the Nodaway and Haig silt loams. Erosion for these soil types due to water is moderate and from wind is slight (Natural Resources Conservation Service, 2009).

All of the soils within the housing area are considered somewhat or very limited for construction of buildings without basements or additional foundational support (Natural Resources Conservation Service, 2009). This limitation is due to several factors including the sloped topography of the site and the shrink-swell potential of the soil types located at WAFB. Soils with a high shrink-swell potential will expand when exposed to moisture and then shrink dramatically as the soils dry out. This can create foundational problems in structural designs that do not factor in the shrink-swell potential.

### **3.3.2 Analysis Methodology**

Minimization of soil erosion and the siting of facilities in relation to potential soil limitations are considered when evaluating impacts to soils. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering designs are incorporated into project development. Analysis of impacts to soil resources resulting from proposed activities examines the suitability of locations for proposed operations and activities. Impacts to soil resources can result from earth disturbance that exposes soil to wind or water erosion. Proposed construction and demolition activities would occur in previously developed areas at WAFB. Soils in these areas have been disturbed by various construction activities relating to the housing areas and the supporting infrastructure such as roads and sidewalks. Therefore, impacts to the productivity of soils were not evaluated.

### **3.3.3 Environmental Consequences**

Problem areas for typical construction and demolition projects include areas of steep slopes and erodible soils. Several areas of higher slopes are located in the housing areas. Soils types such as Mandeville, Gorin, Norris, and areas of Deepwater silt loam have slopes that range from 2 to 15 percent. If the potential construction and demolition activities should occur in these locations, there would be a possibility for water and wind erosion during construction activities. Engineering controls such as the use of silt fences, sediment traps, wetting of the construction site, daily site inspections, and other BMPs, as outlined in WAFB's SWPPP, would reduce soil movement, stabilize runoff, and control sedimentation.

Due to the sloped topography of the potential project sites and the shrink-swell potential of soils in the area, any construction activities that occur in the housing area would be designed with foundations suitable to the conditions. As evidenced by existing construction in the housing area, these soil limitations can be overcome with proper design and construction. All of the potential construction and demolition would take place on previously developed land. In areas disturbed by construction, BMPs as required by the SWPPP would be implemented to minimize soil erosion. Upon completion of all land-disturbing activities, soils would be stabilized by seeding, construction of facilities, or other suitable means.

### **3.3.3.1 Proposed Action**

The proposed construction of new recreational facilities has the highest potential to create soil erosion. Approximately 2.3 acres of land would be disturbed under the Proposed Action. This construction would require a Land Disturbance Permit from the MDNR. This permit would require contractors to establish and maintain an erosion control plan and to implement BMPs during demolition and construction activities. No adverse impacts to soil resources are anticipated.

### **3.3.3.2 Alternative 1: 891 End-State Units**

The proposed demolition of existing housing units and construction of new recreational facilities would have the highest potential to create soil erosion. Approximately 8 acres of soils could be disturbed if all of the planned construction and demolition activities were to occur. However, with the implementation of BMPs during design and construction, these impacts would be minimized. All demolition and construction sites would be stabilized following construction activities, and no long-term adverse impacts to soil resources are anticipated.

### **3.3.3.3 No Action Alternative**

Under the No Action Alternative, existing conditions for soil resources at WAFB would remain as described in Section 3.3.1, and no impacts are expected to soil resources under the No Action Alternative.

## **3.4 HAZARDOUS MATERIALS & WASTE**

This section describes the affected environment associated with hazardous materials and hazardous wastes, asbestos, lead-based paint, solid waste, and Environmental Restoration Program (ERP) sites at WAFB. The terms “hazardous materials” and “hazardous waste” refer to substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA). In general, hazardous materials include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released into the environment. Hazardous wastes that are regulated under RCRA are defined as any solid, liquid, contained gaseous, or semisolid waste, or any

combination of wastes that either exhibit one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity, or are listed as a hazardous waste under 40 CFR 261. Petroleum products include petroleum-based fuels, oils, and their wastes.

The affected resources include the potential presence of asbestos in structures. Asbestos is a naturally occurring mineral that is a very effective heat and sound insulator. Consequently, it has been used in many buildings as a fire and noise retardant. However, asbestos has been linked to several diseases, including lung cancer and has not been used in construction materials since 1987. Friable (brittle) asbestos becomes hazardous when fibers become airborne and are inhaled.

The affected resources include the potential presence of lead-based paint (LBP) in structures. Lead was used as an additive and pigment in paints for many years prior to 1978; therefore, older structures on WAFB that have multiple layers of older paint are potential sources of lead. Lead has been associated with central nervous system disorders, particularly among children and other sensitive populations. The use of LBP in residences ceased in 1978 when the Consumer Product Safety Commission lowered the allowable lead content in paint to 0.06 percent by weight (trace amount). The DoD banned LBP use in 1978. Exposure to lead is usually through inhalation during renovation and demolition activities or through ingestion of paint chips or lead-contaminated drinking water.

Affected resources also include Air Force ERP sites. The ERP is used by the Air Force to identify, characterize, clean up, and restore sites on Air Force property contaminated with toxic and hazardous substances; low-level radioactive materials; petroleum, oils, and lubricants; or other pollutants and contaminants. Although widely accepted at one time, the procedures followed for managing and disposing of wastes resulted in contamination of the environment. The ERP has established a process to evaluate past disposal sites, control the migration of contaminants, identify potential hazards to human health and the environment, and remediate the sites.

The ROI for hazardous materials and hazardous and solid waste is defined as the boundary of MFH areas and encompasses areas that could be exposed to an accidental release of hazardous substances from the construction or demolition activities and areas where hazardous materials would be utilized and hazardous wastes generated as part of the Proposed Action.

### **3.4.1 Affected Environment**

***Hazardous Materials and Hazardous Waste*** - MFH areas contain no industrial facilities; however, residents may purchase cleaning supplies and other chemicals for personal use that contain constituents classified as hazardous materials. These products are typical of those found in a household and include gasoline, motor oils, paints and thinners, small volumes of pesticides, cleaning solvents, and janitorial supplies. The use of these chemicals is not tracked by the installation, and the quantity stored of these materials is unknown. There are no records of spills or releases associated with hazardous materials in MFH areas (Golson, 2008a).

Petroleum, oils, and lubricants (POLs) and water-based paints are stored at the Housing Maintenance Facility (building 165), which performs housing management and maintenance activities. These materials are typically stored in metal flammables cabinets employing integral secondary containment. The adjoining Self-Help Store (building 165) also stores hazardous materials, such as aerosol paints, and re-issues for reuse to housing residents. All materials are managed in accordance with installation policies, and there are no records of spills or releases associated with hazardous materials at building 165 (Golson, 2008a).

WAFB is classified as a small-quantity generator of hazardous wastes (USEPA identification number MO8571924549 and Missouri identification number 003195). Hazardous wastes are primarily associated with the maintenance and operation of jet aircraft. The Natural Resources Element of the 509th Civil Engineer Squadron (509 CES/CEAN) operates a 180-day hazardous waste storage facility in building 709. Satellite accumulation points at industrial shops may store hazardous waste for up to one year or until the container is full whichever comes first. There is no permitted storage on-base; therefore, all hazardous waste containers that are full or approach one year in a satellite accumulation point must be sent for disposal within 180 days (U.S. Air Force, 2003a).

Routine household hazardous wastes are generated in MFH areas, including batteries, fluorescent bulbs, pesticides, and paint-related products. There is no current process to collect household hazardous waste from residents. Residents are allowed to dispose of these wastes in the solid waste stream. Used oil or other automotive fluids may also be generated as part of “do-it-yourself” vehicle maintenance activities. These materials may be turned into the Recycling Center or the Auto Hobby Shop for disposal (Golson, 2008b). According to personnel, no hazardous waste, other than universal

waste fluorescent lamps, is generated at the Housing Maintenance Facility. Collected used fluorescent lamps are disposed through the Hazardous Materials Pharmacy (HAZMART) in building 114. Any hazardous waste generated is handled in accordance with the installation's *Hazardous Waste Management Plan* (Golson, 2008b).

**Asbestos** - Older MFH units in the Woodview, Midland, and Lakeside neighborhoods were built in the late 1950s and early 1960s in an era when the use of asbestos-containing material (ACM) was common. Sampling in these neighborhoods has identified ACM in floor tiles, mastic, and other building materials (Golson, 2008b). Many of these units are scheduled to be demolished and would not be conveyed as part of the privatization effort. Remaining units in Woodview and Midland that have been renovated in recent years still have the potential to contain ACM. ACM may also be present in building 165, Housing Maintenance/Self-Help Store (Golson, 2008a).

WAFB manages asbestos in-place where possible, removing it only when there is a threat to human health or the environment or when it is in the way of construction or demolition. Removal and disposal of ACM is carried out in strict compliance with all applicable federal, state, and local laws, rules, regulations, and standards (Golson, 2008a).

**Lead-based Paint** - Lead was used as an additive and pigment in paints for many years; therefore, older structures on WAFB that have multiple layers of older paint are potential sources of lead. Older MFH units in the Woodview, Midland, and Lakeside neighborhoods were built in the late 1950s and early 1960s in an era when the use of LBP was common. Sampling in these neighborhoods has identified LBP on carports and in basement support beams (Golson, 2008b). Housing units in Lakeside are scheduled to be demolished and would not be conveyed as part of the privatization effort. Remaining units in Woodview and Midland that have been renovated in recent years still have the potential to contain LBP. Based on age, LBP could also be present in buildings 165, Housing Maintenance/Self-Help Store (Golson, 2008a).

WAFB manages LBP in-place where possible, removing it only when there is a threat to human health or the environment or when it is in the way of construction or demolition. The *WAFB Lead-Based Paint Management Plan* provides specific policy and guidance to identify and address LBP hazards and to protect the public from exposure to these hazards. The plan also provides guidance on proper management/disposal of material containing LBP (U.S. Air Force, 2003b).

**ERP Sites** - The ERP at WAFB began in 1984 with a Base-Wide Phase I Records Search that identified 13 ERP sites for further investigation. Supplemental investigations beginning in the later 1980s brought the total number of sites to 44 that are being investigated and cleaned up under the ERP. These sites include spill areas, storage tanks, landfills, drainage areas, disposal pits, fire training areas, and radiological sites. Primary contaminants in soil and water include fuels, waste solvents, low-level radiological waste, explosive residues, pesticides, paints and inorganics (U.S. Air Force, 2007). Two of these ERP sites are located within the boundary of MFH areas: Site SS-15, Drum Burial Area, and Site OT-01: Chlordane Application Area (Figure 3-2).

Site SS-15, the Drum Burial Area, which was used during the 1950s for burying gliders, is located in the southern portion of WAFB. The site is gently sloping, grassy field bordered by Vandenberg Avenue to the east, 12th Street to the south (U.S. Air Force, 2007). The west portion of Site SS-15 extends into the east portion of Lakeside MFH. Site SS-15 was initially identified when equipment operators uncovered buried drums in the area. A preliminary assessment was conducted in 1985, followed by a remedial investigation in 1992. Based on a subsequent risk assessment, the MDNR required groundwater monitoring at the site. Three monitoring wells were installed during 1998 for long-term monitoring. Supplemental investigations of soil and groundwater performed in January 2004 detected only metals above regulatory levels. In April 2004, WAFB recommended site closure with No Further Action. The Record of Decision formalizing the site closure was signed in 2006 (U.S. Air Force, 2007).

Site OT-01, the Chlordane Application Areas, consisted of three distinct application areas totaling just less than 60 acres in size, on the western side of WAFB, in areas containing mainly residential housing for base personnel. (Note: Chlordane was applied around building foundations for termite control at a significant number of the WAFB housing structures from roughly 1976 to 1983.) Site OT-01 included both single-family and duplex residences containing either a subgrade basement or a grade-level living area with a crawl space, and extended into Lakeside MFH and Woodview MFH (CH2MHill, 2009).

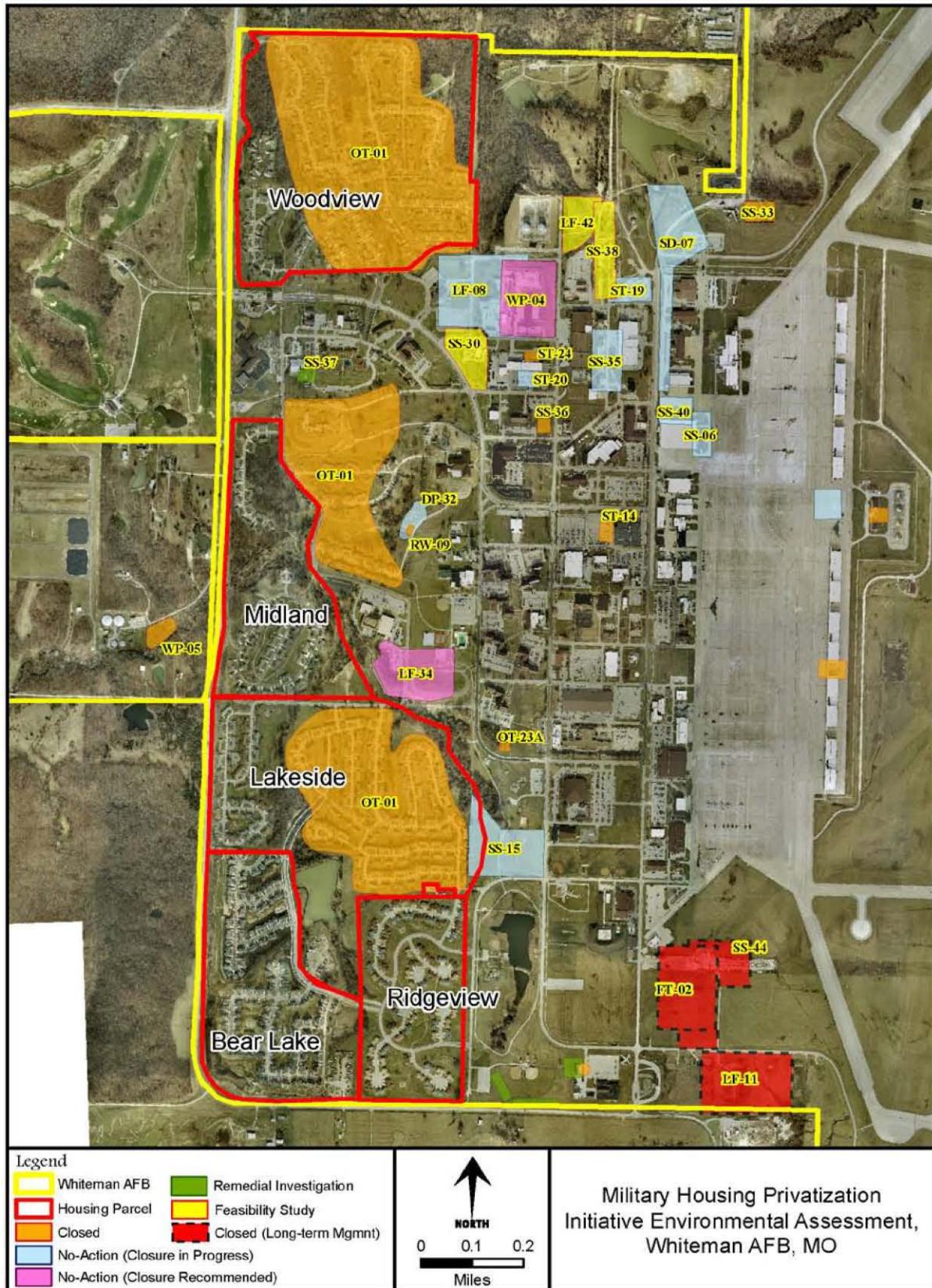


Figure 3-2. ERP Sites on or near MFH Areas

Throughout the 1980s and 1990s, a series of investigations and remediation activities were conducted at Site OT-01. A Phase I risk assessment was completed for the site in 1996, and action levels for surface soil (69 milligrams per kilogram) and indoor air (1.4 micrograms per cubic meter) were developed. The indoor air sampling results were below the indoor air action levels. Because soil sampling results were above the action levels, further investigation was proposed. Subsequently, the Air Force issued a *Proposed Plan for Chlordane Remediation in Base Housing* in 1996. Since publication of the Proposed Plan, the base has required housing occupants to maintain the integrity of the landscaping applied to prevent contact with soils near housing foundations (CH2MHill, 2009).

Although levels of chlordane observed in soil at Site OT-01 were consistent with proper chlordane application techniques and further action was not required, the proposed action was to conduct a Phase II investigation consisting of sampling the surface soils at housing units not previously sampled. The purpose of the Phase II investigation was to further characterize chlordane concentrations in surface soils and to determine the appropriate remediation response action for each housing unit. To reduce human health risk from direct contact with surface soil, the action selected was landscaping, consisting of placing a permeable geosynthetic fabric layer directly on the contaminated soil and installing permanent vegetative plantings, mulch, or river rock. Sample results from previous investigations indicated that no action was necessary for indoor air (CH2MHill, 2009).

In 2005, WAFB excavated roughly 1,000 cubic yards of chlordane-contaminated soil from Site OT-01 as part of housing demolition work. The excavated soil was stored at Site OT-01 in 20 separate stockpiles. Samples were collected from these stockpiles in October and November 2005 and analyzed for toxicity characteristic leaching procedure (TCLP) chlordane. Chlordane TCLP concentrations ranged from 0 to 0.202 milligram per liter (mg/L). The chlordane TCLP limit for hazardous waste classification under Resource Conservation and Recovery Act (RCRA) is 0.03 mg/L, classifying 650 cubic yards of the soil as characteristic hazardous waste (D020) and the remaining 350 cubic yards of soil as nonhazardous special waste.

In April 2006, WAFB moved the contaminated soil from Site OT-01 to Site LF-03. The soils located at LF-03 became known as the “Chlordane Piles.” There have been no chlordane-contaminated soil removal activities at Site OT-01 since 2006 (CH2MHill, 2009).

Based on the previous investigations and review of pesticide application records for Site OT-01, the Air Force determined that the chlordane contamination at Site OT-01 was a result of proper application of the pesticide for its intended use and thus does not meet the definition of a release under CERCLA. The Air Force determined that no action is required for Site OT-01. A report, *End of Activities at the Base Housing Area: Chlordane Application Area*, which documents the site history and future expectations of Site OT-01, was signed by the installation commander on 16 October 2009 (CH2MHill, 2009).

Future work in the housing area at WAFB will adhere strictly to Air Combat Command policy, as well as the USACE *Guidance for Addressing Chlordane Contamination at Department of Defense Sites* (U.S. Army, 2004), regarding the disturbance or excavation of soil containing chlordane. The USACE guidance explains how to manage chlordane that was intentionally applied and specifies that any remediation of affected soils and/or actions to prevent or minimize exposure would be on a voluntary basis. The limits of Site OT-01 and Air Combat Command policy regarding the disturbance or excavation of soil containing chlordane will also be included in the base *General Plan* (CH2MHill, 2009).

None of the ERP sites discussed above, or any other ERP sites located at WAFB, are likely to cause or contribute to a release/migration of hazardous substances or petroleum products to the subject properties (Golson, 2008b).

### **3.4.2 Analysis Methodology**

Potential impacts from implementation of the Proposed Action or the alternatives on hazardous materials and wastes were assessed based on the following factors:

1) Generation of hazardous waste types or quantities that could not be accommodated by the current management system. Process knowledge or other available data for activities associated with the alternatives were utilized to predict the type and quantity of hazardous waste that would likely be generated from these activities. These data were compared with current installation generation rates, waste types, and capability for managing hazardous wastes. A significant impact would result if implementation of the Proposed Action or alternatives resulted in hazardous waste types/quantities that could not be accommodated by the current management system or would require a change in generator status of the installation.

2) Use of hazardous material that could not be accommodated by the current management system. Activities associated with the alternatives were analyzed to predict the type of hazardous materials that would likely be required in these activities. A significant impact would result if implementation of the alternatives resulted in the use of hazardous materials that are highly toxic or have a potential to cause severe environmental damage (e.g., extremely hazardous substances as listed in the Superfund Amendments and Reauthorization Act [SARA] Title III).

4) Causation of adverse impacts to an existing ERP site by disturbing the ground in a site identified as having contaminated soil or by causing damage to existing site remediation infrastructures (e.g., pumps, tanks). The analysis identified existing ERP sites and compared the location of these sites with the location and scope of proposed activities. A significant impact would result in disturbance to an ERP site that would require implementation of remediation measures or regulator involvement.

### **3.4.3 Environmental Consequences**

#### **3.4.3.1 Proposed Action**

*Hazardous Materials and Hazardous Waste* - New buildings, such as the proposed community centers, would be constructed utilizing normal construction methods, which would limit to the extent possible the use of hazardous materials. Petroleum products and other hazardous materials (e.g., paints and solvents) would be used during construction and renovation activities.

Usage of hazardous materials would be tracked and documented through the existing “pharmacy system.” Hazardous materials that are not currently in the installation inventory would go through an approval process to ensure that they would not pose undue health or environmental hazards before they could be used. This approval process involves a review by various organizations, including Bio-Environmental Engineering, Safety, and Environmental.

Hazardous materials would be stored in proper containers, employing secondary containment as necessary to prevent and limit accidental spills. All spills and accidental discharges of petroleum products, hazardous materials, or hazardous waste would be reported and mitigated. WAFB has emergency response procedures and site-specific contingency plans for all hazardous materials locations. The WAFB *Hazardous Waste Management Plan* (U.S. Air Force, 2003a) and the *Facility Response Plan* (U.S. Air Force,

2008) describe procedures and responsibilities for responding to a hazardous material spill or other incidents.

Construction activities associated with the Proposed Action would not be expected to generate hazardous wastes; however, minor renovation of older housing units could result in the production of LBP or ACM (see below for additional information). The management of these wastes would be performed according to prescribed procedures already in place, which are designed to prevent or reduce pollution, reduce safety and health risks, and recycle wastes when possible. Wastes that cannot be recycled would be disposed of in a manner approved by the USEPA, at licensed facilities.

No change to permits, hazardous waste generator status, or management would be required, and no significant environmental impacts from implementation of the Proposed Action are anticipated.

**Asbestos** - Sampling in the Woodview, Midland, and Lakeside neighborhoods has identified the presence of ACM. ACM is also present in building 165, Housing Maintenance/Self-Help Store. No demolition activities would be associated with the Proposed Action, although minor building renovations may occur. Any debris generated as a result of renovation activities would be characterized for the presence of asbestos to determine whether to dispose of it as solid waste or hazardous waste. Proper disposal of asbestos wastes would be conducted as directed by the National Emission Standards for Hazardous Air Pollutants (NESHAP), which requires all suspect material (anything other than wood, glass, plastic, metal) to be assumed to be asbestos unless sampling proves otherwise.

Additionally, only those contractors who are licensed to perform asbestos abatement work in Missouri would be allowed to work on the project. Contractor personnel would have to be trained and certified. Transport and disposal documentation records, including signed manifests, would also be required.

Implementation of these established operating procedures would mitigate any significant environmental impacts resulting from ACM, and ACM would not be employed for any new construction.

**Lead-based Paint** - Past sampling in the Woodview, Midland, and Lakeside neighborhoods and in building 165 has identified the presence of LBP. Any debris generated as a result of minor renovation activities would be characterized for the presence of LBP. Renovation of structures known to contain LBP would be

conducted in accordance with applicable regulations. Proper disposal of lead-containing wastes would also be conducted in accordance with state and federal regulations, including the Toxic Substances Control Act (TSCA) and the Occupational Safety and Health Act. Further, these wastes would be accompanied by a waste manifest and disposed of at a state-approved facility.

Implementation of these established operating procedures would mitigate any significant environmental impacts resulting from LBP, and LBP would not be employed for any new construction.

***ERP Sites*** - Two of ERP sites are located within the boundary of MFH areas: Site SS-15, Drum Burial Area, and Site OT-01: Chlordane Application Area (Figure 3-2).

ERP sites OT-01 and SS-15 have been classified as requiring no further action. Further, proposed renovation activities would require no ground/soil disturbance around existing MFH units or around ERP Site SS-15. Regardless, should any unusual odor, soil, or groundwater coloring be encountered during development activities in any areas, construction would cease and the Environmental Management Office would be contacted immediately. Therefore, implementation of the Proposed Action does not pose any significant environmental impacts to ERP sites.

### **3.4.3.2 Alternative 1: 891 End-State Units**

Alternative 1 has similar site conditions to the Proposed Action with regard to hazardous materials and hazardous wastes, with the exception that 42 housing units would be demolished and a new Housing Maintenance Facility would be constructed. There are no potential impacts to hazardous materials or hazardous waste, asbestos, or LBP for Alternative 1 not already described under the Proposed Action.

Demolition of housing units would be coordinated through the Environmental Management Office to ensure that ERP Site OT-01 would not be adversely impacted. Therefore, implementation of Alternative 1 does not pose any significant environmental impacts to ERP sites.

### **3.4.3.3 No Action Alternative**

The No Action Alternative has similar site conditions to the Proposed Action with regard to hazardous materials and hazardous wastes, with the exception that there would be only minor renovations and no demolition or construction. Therefore,

implementation of the No Action Alternative does not pose any significant environmental impacts associated with hazardous materials and waste.

### **3.5 SOLID WASTE**

“Solid waste” in Missouri is defined in the Code of State Regulations (CSR) Title 10, Division 80. Solid waste includes “garbage, refuse and other discarded materials including, but not limited to, solid and semisolid waste materials resulting from industrial, commercial, agricultural, governmental and domestic activities, but does not include hazardous waste as defined in sections 260.360 to 260.434, RSMo recovered materials, overburden, rock, tailings, matte, slag or other waste material resulting from mining, milling or smelting.” The regulations at 10 CSR 80-1 through 11 also include provisions for the designing and permitting of operation for sanitary, demolition, and utility waste landfills as well as regulations for waste collection and management.

Wastes generated or requiring management under this action would be construction debris or demolition wastes under the Missouri CSR. Air Force regulatory requirements and management of solid waste are established by Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*. AFPD 32-70 requires compliance with applicable federal, state, and local environmental laws and standards. For solid waste, AFPD 32-70 is implemented by AFI 32-7042, *Solid and Hazardous Waste*. AFI 32-7042 requires that each installation have a solid waste management program that includes a solid waste management plan that addresses handling, storage, collection, disposal, and reporting of solid waste. AFI 32-7080, *Pollution Prevention Program*, contains the solid waste requirement for preventing pollution through source reduction, resource recovery, and recycling. The 509 CES/CEAN at WAFB manages the solid waste management programs.

The impacted resource associated with the generation of solid waste and subsequent disposal is the available landfill capacity located within the ROI.

#### **3.5.1 Affected Environment**

In Missouri, a series of Solid Waste Management Districts (SWMDs) were formed to encourage regional, city and county cooperation in proper solid waste management. WAFB is located in Johnson County that is part of Region F or the West Central SWMD. The primary landfill resource within Region F is the Show-Me Regional Landfill located

near Warrensburg, Missouri. This landfill was permitted originally in 1993 and comprises a total area of 69 acres. A second landfill adjacent to the sanitary landfill was operated in the early 1990s, and the design capacity of both landfills was 9.94 million cubic yards (7.6 million cubic meters) (MDNR, 2006). C&D wastes have been found to range from 169 to 860 pounds per cubic yard (lbs/cubic yard) (New Mexico Solid Waste Bureau, 2008) when disposed of. Using the range midpoint (515 lbs/cubic yard), the mass of the design capacity at the landfill is estimated to be approximately 2,559,550 tons.

### **3.5.2 Analysis Methodology**

The alternatives evaluated within this EA would result in the generation of C&D debris associated with the demolition, construction, and renovation as identified in Chapter 2. C&D debris includes materials such as construction materials for buildings, concrete, and asphalt rubble. Sampling studies documented in *Characterization of Building-Related Construction and Demolition Debris in the United States* (USEPA, 1998) indicate that the solid waste generation rate during residential construction activities is 4.38 pounds per square foot (lbs/ft<sup>2</sup>) of debris. Similarly, the USEPA guidance indicates that the average generation rate associated with the demolition of residential structures within the United States is approximately 115 lbs/ft<sup>2</sup>. Generation rates associated with renovation of facilities have not been established; therefore, in order to develop a conservative estimate, the generation rate associated with demolition activities (115 lbs/ft<sup>2</sup>) was used in calculating the mass of debris from renovation activities. Because the Proposed Action and alternative includes housing unit renovation and demolition and desired feature construction related to housing personnel, the generation rates associated with residential construction activities was deemed appropriate for use in this evaluation.

In addition to debris generated from the construction of structures and the demolition and/or renovation of housing units, additional C&D debris would result from the demolition of associated impervious areas (e.g., patios, walkways, driveways, roads) as discussed in Section 2.5.1. For estimating purposes, a depth of concrete and asphalt for impervious surfaces and roads of 6 inches (0.5 foot) was selected. This depth was then multiplied by the total impervious area and multiplied by concrete density (150 lbs/cubic foot) or asphalt (125 lbs/cubic foot) to determine the total weight of debris that would be produced. The number of pounds was then divided by 2,000 to give the weight in tons.

As stated in Section 2.2 and 2.5, a number of units would require “minor repairs.” Because the types of repairs are expected to vary and all repairs are considered minor, no major construction or demolition activities are expected at the units requiring repairs. Due to these facts, the quantity of debris and wastes associated with repairs of existing units are expected to generate only minor quantities of wastes (e.g., debris) and were therefore not estimated as this waste quantity would not be expected to have any measurable impact to landfill resources within the ROI.

### **3.5.3 Environmental Consequences**

#### **3.5.3.1 Proposed Action**

The Proposed Action includes only minor maintenance of existing housing structures located within the Ridgeview and Midland housing areas. Because major construction, demolition, or renovation activities are not included, construction debris associated with the minor maintenance is considered to be negligible; therefore, the impact to solid waste resources within the ROI would also be negligible as well. This alternative is not expected to have any impact upon landfill capacities within the ROI.

The Proposed Action also includes the potential for construction of some desired features within the housing areas. The proposed desired modifications are provided in Table 2-2 and include two community centers, volleyball/basketball and tennis courts, widening of driveways, and construction of 20 covered bus stop shelters. Of these improvements, only the bus stop shelters and community centers are considered to be actual structures that are expected to result in the generation of large quantities of solid waste. The remainder of the improvements may require some land clearing but would primarily be either paving or concrete type work depending upon the selected materials of construction. It is anticipated that the construction of the various courts for sports activities would not generate measurable quantities of solid waste as in most cases the waste material is limited in nature and often can be utilized on other projects (e.g., asphalt). In addition, any plant material or soil generated from land clearing operations is normally either reused at the construction site as fill or is disposed through mulching or open burning under a permit. Because of these considerations, no waste (or a limited quantity of waste) requiring disposal is expected to be generated from the construction of basketball, volleyball, or tennis courts or from the widening of driveways.

Based upon the construction of the two community centers and 20 bus stops, it is estimated that approximately 32,000 square feet of new construction would be required. Using the USEPA generation rate of 4.38 lbs/ft<sup>2</sup>, the construction would generate

approximately 140,160 lbs, or 70 tons, of construction debris. Note that the more conservative generation rate for residential construction was utilized in calculating the waste estimate. Based upon the design capacity of the landfill within the ROI, the waste generated from the construction of housing area upgrades is expected to be 0.00001 percent of the design capacity of the Show-Me Regional Landfill. Therefore, the Proposed Action would not result in any adverse impact on solid waste resources within the ROI.

### **3.5.3.2 Alternative 1: 891 End-State Units**

This alternative would involve the demolition of a number of units prior to and after transfer to a private developer. As stated in Section 2.5.1, 12 units would be demolished prior to transfer and an additional 30 units would be demolished after transfer to a private developer. The debris associated with MILCON demolition of 12 housing units under Alternative 1 is not included within this evaluation. Based upon the information provided in Table 2-5, the total square footage of the 30 housing units to be demolished either by the Air Force or the private developer is 34,272 square feet. An additional 38,250 square feet of impervious surfaces (e.g., patios, driveways, etc.) associated with the 30 housing units is also expected to be demolished.

Using the generation rate of 115 lb/ft<sup>2</sup> provided by USEPA, it is estimated that approximately 3,941,280 lbs, or 1,970 tons, of debris would be generated from the demolition of the housing unit structures. An additional, 2,868,750 lbs, or 1,434 tons, of concrete debris is estimated to be generated from the demolition of the associated impervious surfaces. Total debris estimated from the demolition activities is 3,404 tons.

Alternative 1 also includes minor maintenance of existing housing units as discussed within the Proposed Action. Because this maintenance does not include major renovation, demolition or construction activities waste debris associated with such maintenance is considered to be negligible.

As shown in Table 2-5, additional improvements would be constructed under this alternative. Of these improvements, only the construction of the Housing Maintenance Facility, bus stop shelters, and community centers, is expected to result in the generation of solid waste. The remainder of the improvements may require some land clearing but would primarily be either paving or concrete work depending upon the selected materials of construction. It is anticipated that the construction of the various courts for sports activities would not generate measurable quantities of solid waste as in most cases the waste material is limited in nature and often can be utilized

on other projects (e.g., asphalt). In addition, any plant material or soil generated from land clearing operations is normally either reused at the construction site as fill or is disposed through mulching or open burning under a permit. Because of these considerations, no waste (or a limited quantity of waste) requiring disposal is expected to be generated from the construction of basketball, volleyball, or tennis courts or from the widening of driveways.

Based upon the construction of the Housing Maintenance Facility, two community centers, and 20 bus stops, it is estimated that approximately 36,700 square feet of new construction would be required. Using the USEPA generation rate of 4.38 lbs/ft<sup>2</sup>, the construction would generate approximately 140,160 lbs, or 80 tons, of construction debris. Note that the more conservative generation rate for residential construction was utilized in calculating the waste estimate.

This alternative also includes the potential for the demolition of approximately 38,293 square feet of paved road associated with the housing units to be demolished. For estimating purposes, asphalt was used as the material of roadway construction. Based upon the area of roadway to be demolished, approximately 2,018,313 lbs, or 1,009 tons, of debris is expected to be generated.

Based upon the projected activities associated with Alternative 1 a total of 4,493 tons of debris would be generated from demolition and construction activities. This waste mass is approximately 0.18 percent of the overall landfill capacity. Due to the amount of waste expected to be generated, there are no anticipated negative impacts to solid waste resources within the ROI.

### **3.5.3.3 No Action Alternative**

This alternative is the same as the Proposed Action with regard to the expected wastes generated from the housing areas. Under this alternative, 133 units would require minor repairs, which is the same as found under the Proposed Action. As discussed in Section 3.5.3.1, because major construction, demolition, or renovation activities would not be conducted under the No Action Alternative, the mass of construction debris associated with the minor maintenance is considered to be negligible and would have no or negligible impact to landfill resources within the ROI.

It is anticipated that additional projects would be undertaken under the No Action Alternative at WAFB that are likely to result in the generation of additional solid waste or debris associated with construction, renovation, or demolition of existing structures or facilities. Because specific information regarding future actions is not

available, the quantity of wastes and potential impact to landfill resources cannot be estimated at this time.

## **3.6 SOCIOECONOMICS**

Socioeconomic resources are defined as the basic attributes associated with human activities. The WAFB MHPI is primarily associated with the construction and renovation of on-base housing units for military members. Therefore, the following resources are addressed under socioeconomic as the indicators that could be potentially impacted by the MHPI process: employment, earnings, and housing market conditions.

### **3.6.1 Affected Environment**

The socioeconomics ROI for WAFB is Johnson and Pettis Counties. WAFB has a strong influence on the local economy within this region. As the largest population centers near the base, the cities of Knob Noster, Warrensburg, and Sedalia provide the largest supply of housing and other amenities for the military personnel stationed at WAFB.

The total population in 2006 in Johnson County was approximately 50,600 and over 40,500 in Pettis County. The population of Missouri was over 5.8 million in the same time period. Between 2000 and 2006, the population in the ROI increased slightly at an average annual rate of 0.8 percent in Johnson County and 0.5 percent in Pettis County. The increase in population in the state of Missouri was comparable to the ROI with an average annual increase of 0.7 percent (Table 3-4).

**Table 3-4. Population Growth, 2000–2006**

Region	Year		Average Annual Change, 2000–2006
	2000	2006	
Johnson County	48,258	50,646	0.8%
Pettis County	39,403	40,520	0.5%
Missouri	5,595,211	5,842,713	0.7%

U.S. Census Bureau, 2006a, 2006b, 2006c

Employment in Johnson County experienced strong growth between 2001 and 2006. Total employment increased at an average annual rate of 2.7 percent for a total of nearly 31,800 jobs in 2006. Employment in Pettis County increased at a slower rate of

0.3 percent per year during the same time period. In 2006, employment in Pettis County was approximately 25,900 jobs. Employment in the state overall also increased at an average annual rate of 1.1 percent for total employment over 3.6 million jobs in the same time period (Table 3-5).

**Table 3-5. Employment Growth, 2001–2006**

Region	Year		Average Annual Change, 2001 – 2006
	2000	2006	
Johnson County	27,884	31,796	2.7%
Pettis County	25,477	25,899	0.3%
Missouri	3,481,232	3,671,337	1.1%

U.S. Bureau of Economic Analysis, 2008a

The largest source of employment in the ROI was the Government and Government Enterprises industry, which includes federal, military, state, and local employment. The Government and Government Enterprises industry accounts for approximately 24 percent of total employment with nearly 14,000 jobs in the combined counties. The Construction industry accounts for approximately 6.6 percent of total employment with over 3,788 jobs in Johnson and Pettis Counties combined.

In FY 2005, a total of 4,993 military personnel were stationed at WAFB, including active duty, Air Force Reserve, and Air National Guard (U.S. Air Force, 2008a). In addition to the military personnel, there are approximately 5,352 dependents and 2,190 civilian employees, for a total of 12,535 persons related to WAFB.

Annual expenditures from WAFB were over \$312 million, including materials and supplies procurement, services contracts, and construction programs. Accounting for the total number of jobs and expenditures generated from WAFB, the total economic impact of WAFB is over \$450 million.

Per capita income in Johnson County and Pettis County in 2006 was slightly lower than the per capita income in the state. Between 2001 and 2006, per capita income in Johnson County increased at an average annual rate of 3.6 percent, reaching over \$24,920 in 2006. In Pettis County, per capita income increased 2.1 percent per year during the same time period. By 2006, per capita income in Pettis County was \$25,986. In the state overall, per capita income increased 3.3 percent per year to reach \$32,789 (Table 3-6).

**Table 3-6. Per Capita Income, 2001–2006**

Region	2001	2006	Average Annual Change, 2001–2006
Johnson County	\$20,847	\$24,920	3.6%
Pettis County	\$23,371	\$25,986	2.1%
Missouri	\$27,818	\$32,789	3.3%

U.S. Bureau of Economic Analysis, 2008b

### **3.6.2 Analysis Methodology**

Socioeconomics is driven by human activities, particularly the demand for goods and services as well as the employment and income that supplies individuals with the means to fulfill the demand. Because the MHPI does not include a change in base personnel at WAFB, the only economic effect would be generated from the construction dollars spent by the Air Force in the local economy. The resulting effects, primarily the change in employment, caused by the additional construction spending was then compared to the overall capabilities of the regional economy to determine the effects and capability of the local economy to absorb the effects. In addition, the change in the amount of available housing in the regional housing market was assessed to determine the capabilities of the local housing market to absorb any additional military personnel that may relocate off-base or military personnel that may return to on-base housing at the completion of the MHPI.

### **3.6.3 Environmental Consequences**

This section discusses potential impacts to socioeconomic resources, including environmental justice and special risks to children.

#### **3.6.3.1 Proposed Action**

Implementation of the Proposed Action would generate jobs and income in the local economy over the term of the project. The effect of the construction expenditures from constructing, demolishing, and renovating the housing units under MILCON has been analyzed under other NEPA documentation. The conveyance of the housing units under the Proposed Action would have a negligible socioeconomic effect on the local community. The private developer would have custody of the housing units as opposed to WAFB. The cost of repairs to 174 units as well as the construction of the community centers and recreational facilities by the private developer would have a

multiplier effect throughout the economy in the ROI. Additional jobs would be generated in the Construction industry in particular. With over 3,780 jobs in the Construction industry in the ROI in 2006, the construction jobs generated by the Proposed Action are not likely to stimulate in-migration of workers from outside of the county. The additional jobs and income as a result of the construction and demolition would have the greatest beneficial effect on the local community. However, these jobs would be temporary and would end at the completion of all of the phases of construction.

Construction of the community centers and recreational facilities are estimated for completion within one year of the beginning of construction. It is expected that the construction term for the minor repairs on the 174 units would be short as the repairs do not involve extensive renovations. No significant impacts associated with socioeconomics are anticipated as a result of the Proposed Action.

### **3.6.3.2 Alternative 1: 891 End-State Units**

Under Alternative 1, construction and demolition would have a temporary beneficial effect on the local economy within the ROI as described in Section 3.6.3.1. The total number of housing units that would be conveyed to the private developer would be less than the number of units conveyed under the Proposed Action. With 42 fewer units, an additional 42 military families would require private sector housing outside of the WAFB privatized housing. With a vacancy rate in the ROI of approximately 8 percent in Johnson County and 9 percent in Pettis County, it is expected that the 42 families requiring private sector housing would be able to find housing to suit their needs without difficulty. No significant impacts associated with socioeconomics are anticipated as a result of Alternative 1.

### **3.6.3.3 No Action Alternative**

Under the No Action Alternative, construction effects would be minimal as the Air Force would conduct minor repairs on 174 units. All other housing units would continue with ongoing MILCON activities. The housing would not be conveyed to a private developer, and the Air Force would continue to be responsible for all of the costs associated with maintaining and providing housing units to military families. No significant impacts associated with socioeconomics are anticipated as a result of the No Action Alternative.

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## 4. CUMULATIVE IMPACTS

According to CEQ regulations, cumulative effects analysis should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects may occur when there is a relationship between a proposed action or alternative and other actions expected to occur in a similar location or during a similar time period. This relationship may or may not be obvious. The effects may then be incremental (increasing) in nature and result in cumulative impacts. Actions overlapping with or in close proximity to a proposed action or alternative can reasonably be expected to have more potential for cumulative effects on “shared resources” than actions that may be geographically separated. Similarly, actions that coincide temporally will tend to offer a higher potential for cumulative effects.

Analysis is conducted by first identifying past, present, and reasonably foreseeable actions as related to the ROI for the particular resource. Cumulative impacts are then identified if the combination of proposed MHPI actions and past, present, and reasonably foreseeable actions interact with the resource to the degree that incremental or additive effects occur.

The proposed privatization activities at WAFB are part of a larger privatization effort that includes Malmstrom AFB, Montana, and F.E. Warren AFB, Wyoming. All three bases are grouped together as part of a single privatization Request for Proposal. However, environmental and socioeconomic impacts associated with the privatization action are singular to the respective installations; therefore, impacts associated with privatization at each installation are analyzed in separate NEPA documentation specific to each installation. With respect to cumulative impacts, decisions regarding whether to implement the proposed action or alternatives at each installation versus the No Action Alternative may negatively impact the grouped privatization effort, in which case the Air Force would need to evaluate alternative means for implementing privatization at the other bases.

### 4.1 PAST, PRESENT, AND REASONABLY FORSEEABLE FUTURE ACTIONS

Past actions relevant to cumulative impact analysis include capital improvement projects undertaken at the installation, including housing improvements already

completed via MILCON. With regard to present and future activities, the *WAFB General Plan* (U.S. Air Force, 2008a) identifies in Section 4D improvement projects with the most potential to interact with the various resource area ROIs identified in this document. Also included are those activities that are associated with ongoing and future housing improvements via the MILCON process as described previously (Table 2-3, in Chapter 2).

## **4.2 CUMULATIVE IMPACT ANALYSIS**

### *Air Quality*

Due to the nature of development activities, it is expected that construction and demolition impacts on air quality would be short-term and limited to localized areas. Extensive, long-term programs such as the housing program could potentially impact regional air quality attainment status given suitable scope and intensity. However, it is unlikely that the combination of the housing project with other projects on- and off-base would cause long-term air quality degradation. The proposed project is not expected to result in significant cumulative impacts to regional air quality.

### *Water Resources*

Previous and ongoing construction of new housing units under the Replace Family Housing project (see Table 2-3) has added to the impervious surface area of WAFB. The cumulative effects of this construction did not combine to create a major change to storm water discharged into local surface waters or groundwater recharge.

As noted in the Environmental Consequences Section 3.2.3, the demolition and construction activities under all of the proposed alternatives would result in only slight increases in impervious surface areas, thereby slightly increasing storm water outflow. However, these slight increases are not expected to result in any significant cumulative increases in storm water outflow when considered with other present and future actions as identified. Additionally, the WAFB is conducting an Environmental Assessment for improvements to the Bear Lake wetland area as part of another, unrelated project. These activities are being coordinated with USACE, and no significant, adverse long-term impacts are anticipated from this action. Beneficial impacts resulting from the proposed improvements are anticipated (Golson, 2009).

In light of past, present, and reasonably foreseeable future actions, the Air Force expects no significant cumulative impacts to surface waters as a result of this project or the overall housing program as currently designed.

### *Soils*

Permanent changes to soil structure and stability can occur by disrupting and reworking soils in areas of demolition and reconstruction if it occurs on undisturbed soils. The activities that would occur under all alternatives would affect only previously disturbed soils, would be limited to small areas, and are insignificant to regional soils resources when considered individually or cumulatively.

To reiterate the discussion in the Water Resources section, studies of the amount of storm water flow leaving WAFB and potential future flows under known construction plans have shown that significant or long-term changes are not expected. With the addition of the proposed alternatives, storm water runoff is not expected to significantly increase. Therefore, changes in soil structure and stability are not expected to occur, nor is soil erosion considered to be at risk of increasing from the past, present, and reasonably foreseeable future actions.

### *Hazardous Materials and Hazardous Waste*

WAFB has developed programs and procedures to comply with all federal, state, and local hazardous materials and hazardous waste management and reporting requirements. No cumulative impacts to hazardous material and hazardous waste management are anticipated.

### *Solid Waste*

WAFB is an active facility that will continue to generate solid waste in the form of municipal solid waste from personnel and C&D wastes from facility upgrades, including construction, renovation, and demolition projects. Although specific projects cannot be quantified at this time, due to the large existing and future capacity at local landfills, no foreseeable cumulative impacts to solid waste resources have been identified.

### *Socioeconomics*

WAFB is an active base with several ongoing construction, demolition, and renovation projects underway. The on-base MFH has been undergoing phased improvements for several years in addition to improvements to other base facilities and

infrastructure. These ongoing construction projects would have an additive, beneficial effect to the Proposed Action and alternatives. This construction generates temporary jobs in the local economy and contributes to the income of workers involved in the construction or other related industries.

## **5. PERSONS AND AGENCIES CONTACTED**

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Luis Diaz  
15 years, environmental science  
M.E., Civil-Environmental Engineering; B.S., Aerospace Engineering  
Hazardous Materials and Hazardous Wastes

Jerry Truitt  
22 years, solid and hazardous waste management  
B.S., Geological Engineering  
Solid Waste

Brian Tutterow  
11 years, NEPA and Natural Resources  
B.S., Biology  
Water Resources and Soils

Tara Utsey  
14 years, editing and document preparation  
B.A., Liberal Arts  
Lead Technical Editor

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## **APPENDIX A**

## **PUBLIC INVOLVEMENT**

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**NOTICE OF AVAILABILITY  
DRAFT ENVIRONMENTAL ASSESSMENT  
MILITARY HOUSING PRIVATIZATION INITIATIVE (MHPI) AT  
WHITEMAN AIR FORCE BASE (WAFB)**

WAFB proposes to privatize between 891 and 933 military housing units by conveying them, as well as all utilities, to a private developer and leasing the land for a period of 50 years. The action may involve demolition, construction, and renovation of several housing units. The Air Force has prepared a Draft EA in accordance with the National Environmental Policy Act.

The Draft EA will be available for review beginning 1 February 2010. The Draft EA can be viewed at the following libraries:

*Trails Regional Library  
432 North Holden Street  
Warrensburg, MO 64093-1730*

*Sedalia Public Library  
311 West 3<sup>rd</sup> Street  
Sedalia, MO 65301-4399*

Comments on the Draft EA will be accepted through 2 March 2010. Please send your comments to 509<sup>th</sup> CES/CEAN, ATTN: Mr. Glenn Golson, FONSI/EA Comments, 660 10<sup>th</sup> Street, Suite 211, Whiteman AFB, MO 65305.



**DEPARTMENT OF THE AIR FORCE  
509TH CIVIL ENGINEER SQUADRON (ACC)  
WHITEMAN AIR FORCE BASE MISSOURI**

1008010

FEB - 1 2010

Date: 01 Feb 2010

**MEMORANDUM FOR ALL INTERESTED GOVERNMENT AGENCIES, INDIVIDUALS, AND ORGANIZATIONS**

**TO:** Mr. Ewell Lawson, State Single Point of Contact  
Federal Assistance Clearinghouse  
Truman Building, Rm 804  
Jefferson City, MO 65102

**FROM:** 509 CES/CEAN  
660 10<sup>th</sup> Street, Suite 211  
Whiteman AFB, MO 65305

**SUBJECT:** Environmental Assessment for the Military Family Housing Privatization Initiative (MHPI)  
at Whiteman Air Force Base (AFB), Missouri

1. We are pleased to provide you the Draft Environmental Assessment (EA) for the Military Family Housing Privatization Initiative (MHPI) at Whiteman AFB, MO. The Proposed Action is to convey all 933 existing housing units, as well as related infrastructure (utility lines, roads, etc.) and the Housing Management Office to a private developer who would own and operate the housing units and associated infrastructure and Housing Office. Of these 933 units, the developer would be required to conduct minor repairs (fixing of siding, updating light fixtures and windows, etc.) on 174 units. The developer may construct several desired features for the housing areas, including community centers and recreational facilities. The alternatives for implementing the Proposed Action are associated with reducing the number of end-state units, which would require the developer to demolish a number of units. An alternative action consists of conveyance of 921 units, minor repairs on 140 units, and demolition of 30 units for an end state total of 891 units. In addition, added to the list of desired features would be a new Housing Maintenance Facility.
2. This document is provided in compliance with the regulations of the President's Council on Environmental Quality implementing the National Environmental Policy Act. Comments on the Draft EA are requested within 30 days from the date on this memorandum.
3. Please send comments and questions to:

509<sup>th</sup> CES/CEAN  
ATTN: Mr. Glenn Golson, FONSI/EA Comments  
101 Gray Lane  
Whiteman AFB, MO 65305

GLENN S. GOLSON, YF-02  
NATURAL RESOURCES ELEMENT CHIEF  
509 CES/CEAN

1 Attachment:  
Draft EA



**Jeremiah W. (Jay) Nixon**  
Governor

State of Missouri  
**OFFICE OF ADMINISTRATION**  
Post Office Box 809  
Jefferson City, Missouri 65102  
Phone: (573) 751-1851  
Fax: (573) 751-1212

**Kelvin L. Simmons**  
Commissioner

February 16, 2010

Glenn Golson  
509th CES/CEAN  
FONSI/EA Comments  
101 Gray Lane  
Whiteman AFB, MO 65305

Dear Mr. Golson:

Subject: 1008010  
Assistance

The Missouri Federal Assistance Clearinghouse, in cooperation with state and local agencies interested or possibly affected, has completed the review on the above project application.

None of the agencies involved in the review had comments or recommendations to offer at this time. This concludes the Clearinghouse's review.

A copy of this letter is to be attached to the application as evidence of compliance with the State Clearinghouse requirements.

Please be advised that I am the contact for the Federal Funding Clearinghouse. You can send future requests to the following address: Sara VanderFeltz, Federal Funding Clearinghouse, 201 West Capitol, Room 125, and Jefferson City, Missouri 65101.

Sincerely,

A handwritten signature in black ink that reads "Sara VanderFeltz".

Sara VanderFeltz  
Administrative Assistant

CC:

**CULTURAL RESOURCE ASSESSMENT**  
**Section 106 Review**

---

**CONTACT PERSON/ADDRESS**

**C:**

509<sup>th</sup> CES/CEAN  
Attn: Mr. Glenn Golson, FONSI/EA Comments  
101 Gray Lane  
Whiteman AFB, MO 65305

**PROJECT:**

Military Family Housing, Whiteman Air Force Base

**FEDERAL AGENCY**

USDOD

**COUNTY:**

JOHNSON

**The Historic Preservation Program has reviewed the information submitted on the above referenced project. Based on this review, we have made the following determination:**



After review of initial submission, the project area has a low potential for the occurrence of cultural resources. A cultural resource survey, therefore, is not warranted.



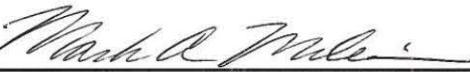
Adequate documentation has been provided (36 CFR Section 800.11). There will be "no historic properties affected" by the current project.



An adequate cultural resource survey of the project area has been previously conducted. It has been determined that for the proposed undertaking there will be "no historic properties affected".

For the above checked reason, the State Historic Preservation Office has no objection to the initiation of project activities. PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK ARE CHANGED, A BORROW AREA IS INCLUDED IN THE PROJECT, OR CULTURAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE INFORMATION MUST BE PROVIDED TO THIS OFFICE FOR FURTHER REVIEW AND COMMENT. Please retain this documentation as evidence of compliance with Section 106 of the National Historic Preservation Act, as amended.

By:



Mark A. Miles, Director and Deputy State Historic Preservation Officer

February 19, 2010

Date

MISSOURI DEPARTMENT OF NATURAL RESOURCES  
HISTORIC PRESERVATION OFFICE  
P.O. Box 176, Jefferson City, Missouri 65102  
For additional information, please contact Rebecca Prater, 573-751-7958.  
Please be sure to refer to the project number: 005-JO-10